

THE IRON AGE

THURSDAY, AUGUST 4, 1892.

The Richards Cam.

Several of the cams of which engravings are here presented have been in constant use for periods varying from two to four years, running at 140 revolutions per minute and driving a turret weighing over 100 pounds, and all are to-day in as good

of a crank—in fact, the “layout” of the cam was originally derived from a crank by means of a special fixture. Afterward an elaborate cam-cutting machine was made in order to mill the cam by a continuous cut from one end of the roll track to the other without any shifting of the machine.

tinuously revolving shaft, S, carrying the cam C and a shaft, S', for carrying the roll-turret B, which is rotated intermittently. In this case the roll-turret is provided with four arms situated at equal distance from each other and furnished at their outer ends with roller studs for carrying the cam rollers R¹ R² R³ and R⁴. These rollers

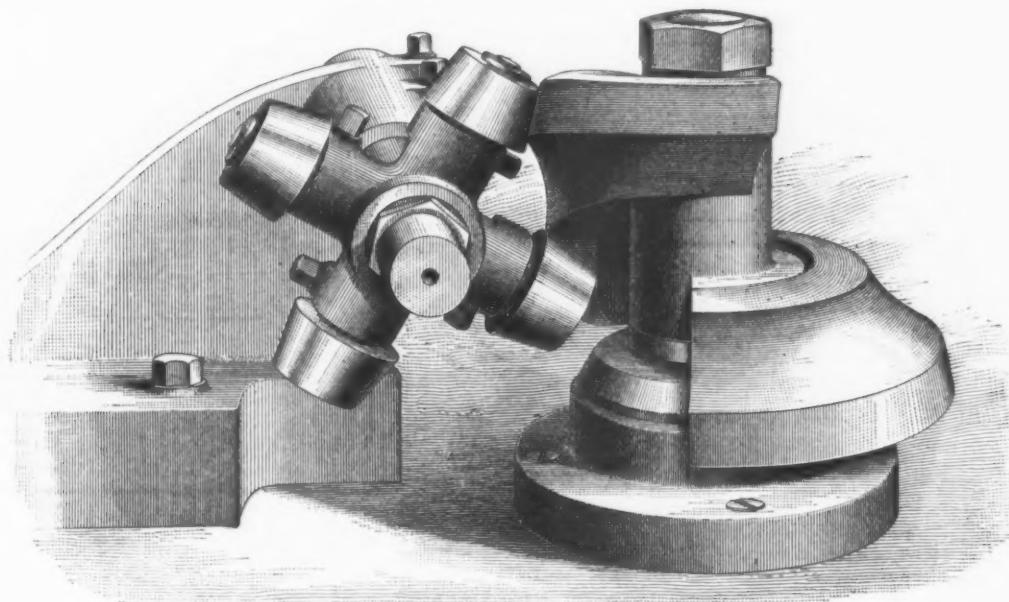


Fig. 1.—Two Rolls in Contact with Cam.

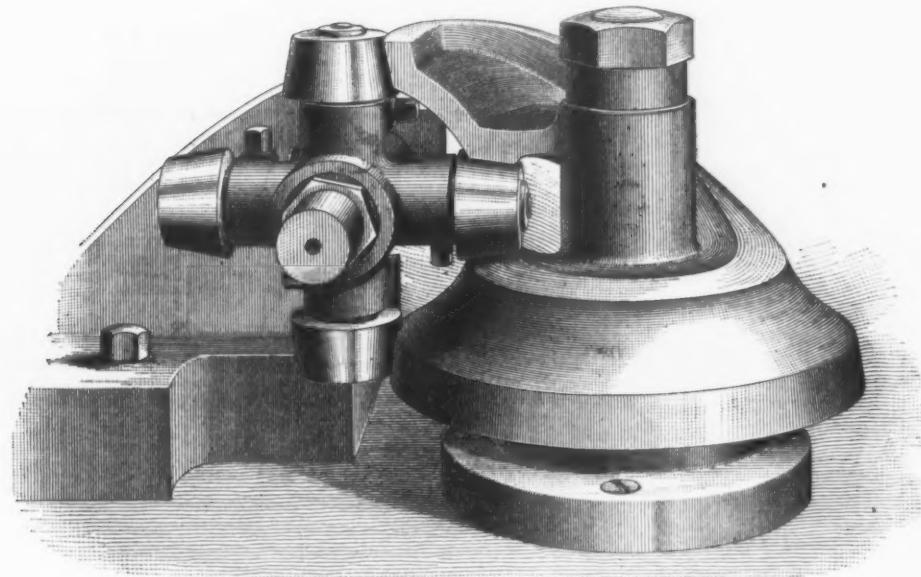


Fig. 2.—Three Rolls in Contact with Cam.

A NOVEL FORM OF CAM.

condition as when first started. The roll-turret fits the cam so that the turret shaft is rigidly controlled during its entire revolution, and at no one time is either of the two rolls which engage the cam free of the cam. The cam is timed so that the roll-turret stands still one-half of the time and revolves during the other half, the movement of the roll-turret being accelerated and retarded the same as the half stroke

The two perspective views, Figs. 1 and 2, convey a very clear idea of the shape of the cam and also show the roll-turret in two positions. The next three figures show the cam and roll-turret from different points of view, while Fig. 6 is a side elevation of the roll-turret and Fig. 7 a section of the same.

The frame carrying the several parts is formed with bearings supporting a con-

are formed tapering and the roller studs made so as to be adjustably secured in the roll-turret in a way we shall describe later. The cam has two faces or roller tracks, J and I, forming the opposite edges of a wide, concaved rib, extending through somewhat more than 360°, which for a part of its length, preferably at each end thereof, is of a circular form—that is, concentric

with the shaft S—and which for the remaining part of its length is of a spiral form, substantially as shown. By making this rib wide enough to fill the space between the rollers upon two adjacent arms it is possible to use but one roller upon

each roller being used twice in succession during each revolution of the shaft S', first as the leading roller and then as the following roller of a pair of them, once on the face I and—usually afterward—once on the face J of the cam. These cam

preceding pair, thereby securing a constant and positive control over the movements of the shaft S'. In this case a single roller is the following roller of the leading pair, and the leading roller of the following pair, so that there

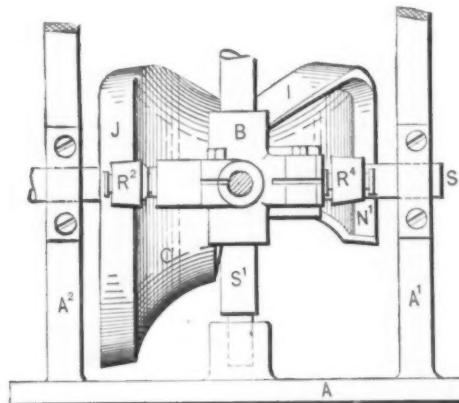


Fig. 3.—Elevation Parallel with Cam Shaft.

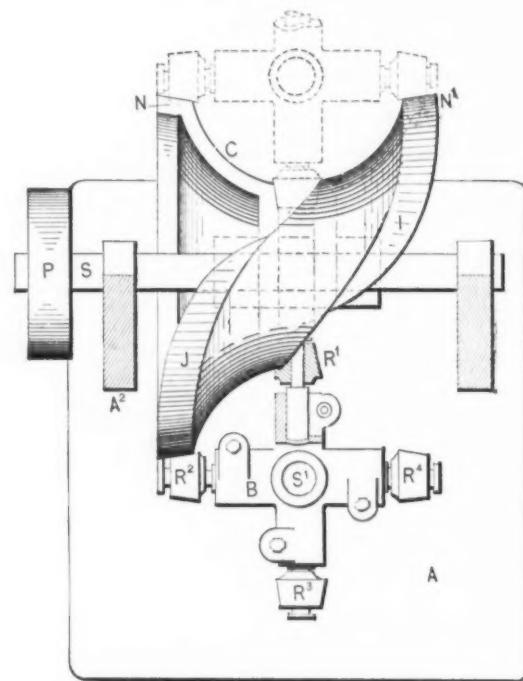


Fig. 5.—Elevation at Right Angles with Roll-Turret Shaft.

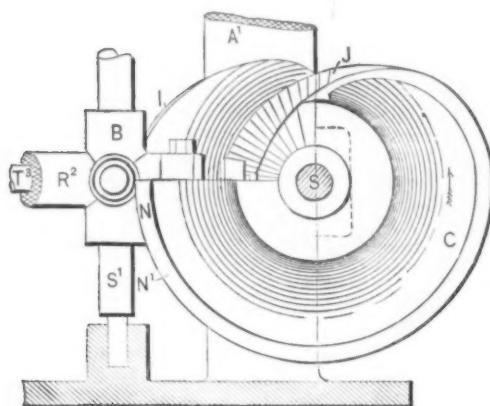


Fig. 4.—Plan at Right Angles with Cam Shaft.

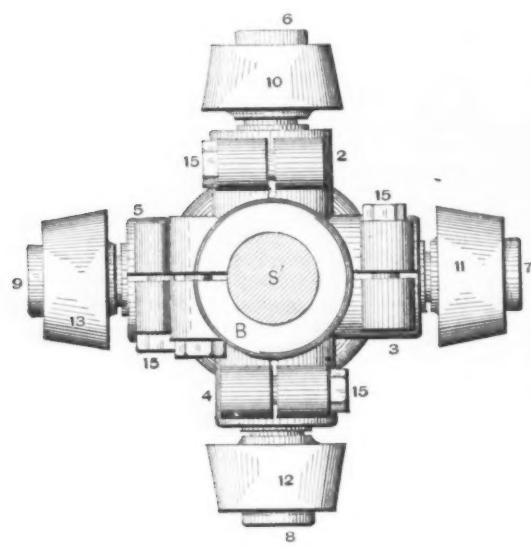


Fig. 6.—Roll-Turret.

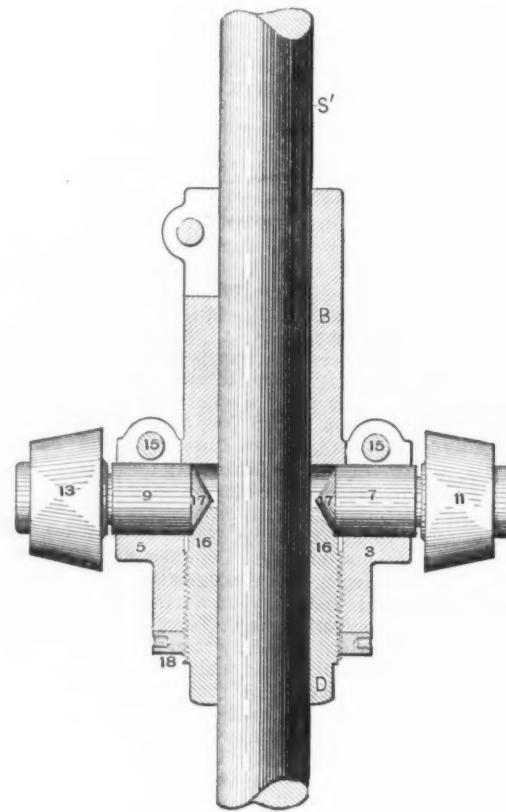


Fig. 7.—Section through Roll-Turret Parallel with its Shaft.

A NOVEL FORM OF CAM.

each arm, or four in all, whereas if that rib were narrow it would be necessary to use two rollers upon each arm. In that case each one of the four pairs of rollers is brought into use successively, while in the present case the four rollers form also four pairs, which are also used successively,

faces extend around the cam somewhat more than one turn, so that their leading end—which is N or N', according to the direction in which the cam is revolved, being usually the latter—may enter between two pairs of rollers before their following end passes from between the

are never more than three single rollers in use at any time, instead of four, as in a former construction. This is illustrated best in Fig. 5, where those three rollers are shown in dotted lines at the top of that view. It will be understood that rollers

are used to work against the cam faces in

order to avoid friction, and not because they are essential to the operation of the device, for the arms or the pins held in them may be made to terminate in a similar form and fulfill the same function so far as relates to the conversion of motion.

Referring now to the roll-turret, Fig. 6, the stems 6, 7, 8 and 9 are held in place by clamping them in the hubs by screws, 15, the hubs being cut open on one side, as shown, to permit this. The lower end of the turret B is bored larger than the shaft S', and is threaded to receive the tubular adjusting screw D, Fig. 7. The point of this screw is tapered, as shown at 16, to form a circular wedge for pushing out the stems, the inner ends of which are preferably correspondingly beveled or tapered, as shown at 17, to secure a better bearing surface. A check nut, 18, is provided to securely set the screw D. When it is desired to spread out the circle of the rollers to a larger diameter for adjusting their bearing pressure on the driving cam it is only necessary to loosen a nut, 18, and possibly the screws 15, and screw up the wedge as the case may demand. To set in the rollers the reverse operation is performed, the wedge being screwed down and the stems driven in against it. It is evident that if in making this mechanism the arms of the turret are not made exactly equal distance from each other the error may, owing to the tapering form of the rollers, be corrected to some extent by a proper adjustment of the roller studs longitudinally of their axes. Of course the division of the roll-turret into "quarters" must be very accurately done, and the expanding screw must be accurately concentric with the shaft, but with care in these respects no serious difficulty has been encountered in reducing the invention to successful operation.

In practice the rolls are of steel, tempered and ground perfectly uniform. Also, the roll stems are similarly made true and interchangeable.

This cam is the invention and has been patented by Francis H. Richards of Hartford, Conn.

Arbitration Proposed.

The situation of affairs in labor circles at Pittsburgh has not shown much change since our issue of last week, the principal event of importance being the proposition of the Pittsburgh manufacturers to submit the settlement of the wage scale to arbitration. As we announced in our issue of last week, the Pittsburgh manufacturers, at a meeting held about three weeks since, introduced a resolution which was unanimously adopted, to the effect that they would agree to submit all differences existing with the Amalgamated Association to a board of arbitrators. This proposition was brought up at a meeting, and in answer to the proposition the Conference Committee representing the Amalgamated Association stated that they were unable to accept the proposition, as a settlement by that course might possibly mean a change in the base of the scale, which they had not been empowered by the Amalgamated Association to make. At a meeting held on Wednesday, the 27th ult., the question of settling the entire matter by arbitration was again brought up and presented to the Conference Committee of the Amalgamated Association. This Conference Committee, through their chairman, Wm. Weihe, announced that before they could agree to arbitrate the differences existing it would be necessary to secure the consent of two-thirds of the lodges in the Pittsburgh district.

When the Pittsburgh manufacturers had been informed that the Conference Committee, representing the Amalgamated Association, would endeavor to secure the

consent of the various lodges to allow the differences to be settled by arbitration, the following resolution was prepared and unanimously adopted. Copies were furnished to the Amalgamated Association and also to all of the Pittsburgh manufacturers directly interested. It reads as follows :

Whereas, The Conference Committees of the manufacturers and representatives of the Amalgamated Association of Iron and Steel Workers have, after 15 long conferences, found themselves utterly unable to make a satisfactory adjustment of the differences existing between them, and it being evident that a satisfactory solution cannot be arrived at except through the operation of a more or less prolonged strike and continued stoppage of work, we, the manufacturers, submit the following :

Resolved, By the combined Western Iron Scale Conference Committees, that the representatives of the Amalgamated Association of Iron and Steel Workers submit the proposition of the manufacturers to arbitrate to the sub-lodges for authority to apply to the courts of Allegheny County for the appointment of a board of arbitration under the laws of Pennsylvania, and that all points of difference be submitted to said board, whose decision shall be final and binding on both parties.

This to be understood :

That you give us a final answer not later than Tuesday week, August 9, 1892, at 3 p.m.

Yours truly,
W. C. MORELAND, JR., Secretary.

In order to do this, the votes being taken by mail, it was decided to adjourn the meeting until Tuesday, August 9, which was done. It is understood that immediately after adjournment steps were at once taken by the Conference Committee of the Amalgamated Association to secure the expression of opinion from the different lodges of the Pittsburgh district as to whether the Conference Committee could accept the proposition made by the Pittsburgh manufacturers. In interviews with several prominent manufacturers of the above city the representative of *The Iron Age* was informed that it is the belief among many of the manufacturers that the Conference Committee of the Amalgamated Association will be delegated with power to settle all differences existing with manufacturers by arbitration. In case, however, the lodges do not favorably receive the proposition it is believed that the Conference Committee will ask that they be vested with power to change the base rates in the scale if it is necessary to do this in order to bring about a settlement. In case the scheme of referring the whole matter to a board of arbitrators is carried through it will be done under the laws of the State of Pennsylvania, and the board will proceed under the rules and regulations as defined by the Wallace act of 1883. The judges of the courts of Allegheny County will be called upon to name the arbitrators and 60 days will be allowed in order to reach a decision. Testimony will be heard from both sides, and the final decision of the arbitrators will be binding on both parties. We believe the course of the Pittsburgh manufacturers in agreeing to settle the differences existing by means of arbitration is a commendable one, and should be adopted by the Amalgamated Association.

Since the commencement of the troubles at Homestead, prominent officials of this organization have repeatedly stated that they are ready at any time to arbitrate the differences existing between the Carnegie Steel Company, Limited, and the locked out employees of the Homestead Steel Works. This being the case, why should that organization refuse a similar course in order to settle the wage scale with the Pittsburgh manufacturers? At several of the meetings held between the Conference Committee the charge was repeatedly made by the members of the Amalgamated Association Committee that the Pittsburgh manufacturers were endeavoring to prevent a settlement until after the labor troubles at Homestead had been arranged.

To any one conversant with the situation it can be seen at once that this claim is absurd, as it is well known that the Homestead steel scale is entirely separate from any other scales, either iron or steel, and has no bearing whatever upon the differences as shown in the respective scales formulated by the Amalgamated Association and the Pittsburgh manufacturers to govern wages in rolling mills. In the face of a statement made by the Conference Committee of the Amalgamated Association that they were unable to make any change in the different bases of the iron scale, the question arises, What has been the use of holding a dozen or more conferences with Pittsburgh manufacturers? The position taken by the manufacturers of that city was well known to the officials of the Amalgamated Association weeks before any conference was held, and if, as claimed, the Amalgamated Committee had no power to make changes in the scale we are unable to see what action could be taken looking to settlement of the differences. The Pittsburgh manufacturers have contended right along that they were ready at any time to meet their employees in conference, and the fact that they have held more than a dozen conferences with a so called Conference Committee of the Amalgamated Association proves this statement conclusively.

Ever since the commencement of the present troubles, both at Homestead and in the iron mills at Pittsburgh, the Amalgamated Association have been inconsistent. First, they have proclaimed that they cannot agree to arbitrate with the Pittsburgh manufacturers, and in the next breath they are crying for arbitration to settle the Homestead difficulties. If this organization are as eager to adopt peaceful methods at all times to settle labor disputes as they have claimed the present opportunity to arbitrate should be taken advantage of at once. In case it is finally decided to arbitrate, it is expected that a number of the mills will resume operations shortly after August 9, with the understanding that they pay wages called for by the new scale as proposed by the Amalgamated Association until the arbitrators have rendered a decision. No scales will be signed, however, and any concessions that may be made to the Pittsburgh manufacturers will be secured to those who start up their mills before a settlement is reached. The next meeting of the two Conference committees, to be held in the Ferguson Building on Tuesday, August 9, will no doubt be extremely important to the iron interests of Pittsburgh, and the outcome will be eagerly watched by every person who is directly or indirectly interested in a settlement of the labor troubles.

J. W. Whittaker, an official of the Amalgamated Society of Engineers, resident at Manchester, England, in testimony given before the Royal Labor Commission, declared that the society, which was established in 1851, now had 515 branches in different parts of the world and a total membership of 72,006. The average rate of wages earned by members of the society was 29 shillings and 2 pence. The hours of labor were 53 or 54 a week. Engineers receive about \$7 a week, as against from \$3 to \$4 a day in the United States.

The endurance of steel plates under severe stress was illustrated in the case of the steamship Portia, plying between this port and Halifax, which was run into on Saturday night by a schooner under full sail. A hole about 5 x 8 feet was made in her bow near the water line, evidently the result of a direct blow. The impact cracked the steel plates for several feet on either side of the hole. The ballast tank soon filled with water, but the only effect was to depress the head of the vessel about 10 inches.

Railroad Statistics.

According to the advance sheets of the introduction of Poor's Manual for 1892 the total number of miles of railroad in the United States at the close of 1891 was 170,601, of which 4471 miles were constructed during the year. The mileage of lines making returns of their share capital and funded and floating debts equaled 167,909, against 163,420 for 1890, the increase being 4489 miles, the rate of increase being 2.7 per cent.

The share capital corresponding to the mileage completed at the end of 1891 equaled \$4,809,176,651, against \$4,640,239,578 in 1890, the increase equaling \$168,937,073, the rate of increase being 3.6 per cent.

The funded debts of all the lines at the close of the year aggregated \$5,235,295,074, a sum \$129,393,049 in excess of the total of 1890 (\$5,105,902,025), an increase of 2.5 per cent.

The other forms of indebtedness of the several companies at the close of the year equaled \$345,302,503, against \$376,494,-297 for 1890, a decrease of \$31,131,794. The total share capital and indebtedness of all kinds of all the roads making returns equaled at the close of the year \$10,-389,884,228, an increase in the year of \$267,198,328 over the total of 1890 (\$10,-122,635,900), the rate of increase for the year being 2 6 per cent.

The cost per mile of all roads making return, as measured by the amount of their stocks and bonded indebtedness, equaled \$59,820, against \$59,577 for 1890.

In 1880 the total capital investment of the railroads of the United States, measured by the amounts of their share capital, funded and unfunded debts, was \$5,108,241,906. Their gross earnings in that year equaled \$615,401,931, or 12.4 per cent. on capital invested, while net earnings amounted to \$255,193,436, being 4.9 per cent. on capital invested.

In 1885 the total capital investment was \$7,825,533,179; gross earnings equaled \$772,568,833, or 9.9 per cent. on capital invested; net earnings, \$269,493,931, being 3.4 per cent. on capital invested. In 1886 the total investment was \$8,163,148,652; gross earnings were \$829,940,-836, equal to 10.2 per cent. of investment, and net earnings \$300,603,564, or 3.7 per cent. on capital. In 1887 the total investment was \$8,673,187,216; gross earnings were \$940,150,702, equal to 10.8 per cent. of investment, and net earnings \$334,989,-119, or 3.9 per cent. on capital. In 1888 the total investment was \$9,369,398,954; gross earnings were \$960,256,270, equal to 10.2 per cent. of investment, and net earnings \$301,631,051, or 3.2 per cent. on capital. In 1889 the total investment was \$9,680,942,249; gross earnings were \$1,002,926,059, equal to 10.3 per cent. on investment, and net earnings \$322,122,721, or 3.3 per cent. on capital.

In 1890 the total investment was \$10,122,635,900; gross earnings were \$1,097,847,428, equal to 10.8 per cent. on investment, and net earnings \$346,921,318, or 3.4 per cent. on capital.

In 1891 the gross earnings of \$1,138,024,459 equaled 9.1 per cent. of the total investment, aggregating \$10,389,834,228, and net earnings, \$356,209,880, equaled 3.1 per cent. The total amount of interest payments in 1891 were equal to 4.25 per cent. of the aggregate bonded indebtedness of all companies, as against 4.27 per cent. in 1890 and 4.40 per cent. in 1889, and the total amount of dividend payments was equal to 1.85 per cent. on all paid-up capital stock in 1891, 1.80 per cent. in 1890 and 1.81 per cent. in 1889.

The following statement shows the number of miles of railroad constructed and in

operation each year in the United States from 1872 to the close of 1891 inclusive:

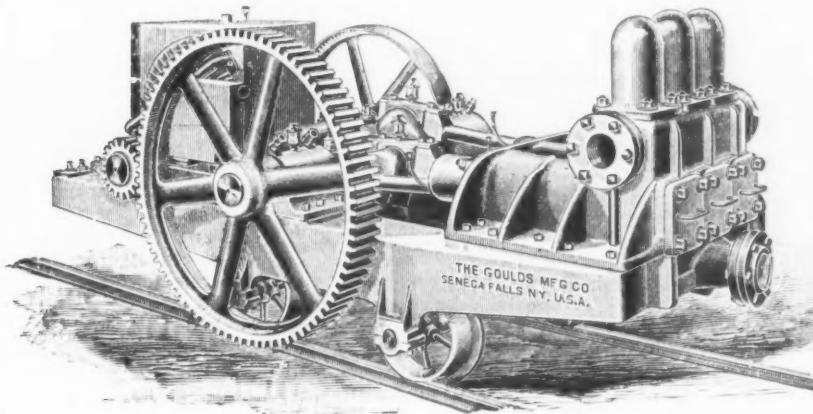
It will be observed how large a mileage of iron track the country still possesses.

Farmers in the great West are offering as much as \$2 and \$2.50 a day to men who will turn in and help harvest the grain crop.

Triplex Electric Mine Pumps.

The horizontal triplex electric mine pump was designed by the Goulds Mfg. Company of Seneca Falls, N. Y., especially for operation in horizontal drifts of mines for pumping water to the bottom of the mine shaft. It consists of a Goulds standard triplex pump, mounted upon one

which will be entirely remodeled, their accommodation and general facilities being materially increased. The company's offices, which are now housed in South Fourth street, will be transferred to Broad street, thus assembling the entire headquarters staff of the company under one roof. When complete the new station will make a worthy companion for the



GOULD'S HORIZONTAL TRIPLEX ELECTRIC MINE PUMP.

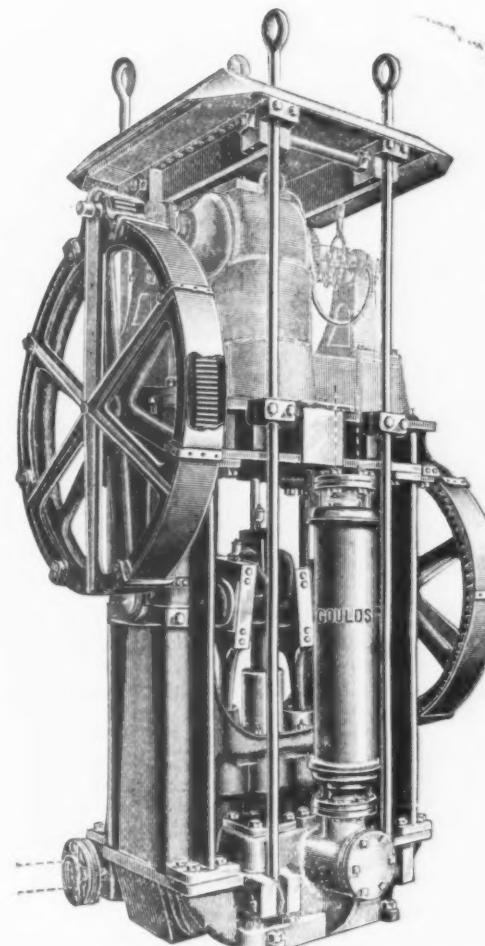
end of the frame of a car and operated by an electric motor placed upon the opposite end of the frame, power being transmitted from the motor to the pump shaft by means of suitable gearing. The pump is built with phosphor bronze plungers, bushed cylinders and glands to resist the action of the acids usually encountered in mine pumping. The connecting rods are tied to the crank shaft by solid bronze bushed strap ends having adjustment for wear. The bronze suction and discharge valves are of simple pattern and adapted for severe and continuous service.

The triplex electric mine sinking pump is intended for use in sinking new shafts or pumping out old ones that have been flooded. The motor is placed on top of the pump, this construction being adopted in order to present as small a cross-sectional area as possible. It is arranged with tie rods for connecting it to the windlass for lowering and raising. All the moving parts are protected by covers. Suction can be made either at the side or bottom, as may be desired, the discharge being vertical. The pump proper has the same general features as the one first described.

The contract for the erection of a new train shed for the Pennsylvania Railroad Company at Broad street, Philadelphia, has been awarded to A. & P. Roberts & Co. of the Pencoyd Iron Works, Philadelphia. The shed, as planned, will be the largest of its kind hitherto constructed, the following being its principal dimensions: Length 598 feet 8 inches; breadth 304 feet, and height at its topmost point 147 feet 6 inches. This magnificent span of roof will cover 16 car tracks, accommodating in all 204 cars. The whole erection will be on a scale hitherto unparalleled in railroad architecture, exceeding in proportions the Pennsylvania's Jersey City depot and the new Reading Terminal station in Philadelphia, which at present hold the palm of magnitude. The materials to be used will be iron and glass; the building being absolutely fire proof. The work of construction will be proceeded with at as early a date as possible, and it is hoped that the shed will be completed before winter. Extensive additions and improvements are also to be undertaken in connection with the main buildings of the Broad street station,

great municipal buildings of the Quaker City, beside which it stands.

The sum of \$1,263,320 was appropriated by the New York Board of Estimate and Apportionment for permanent improvement of public works. For additions to the city institutions on Ward's Island and at Central Islip \$500,000 were appropriated.



GOULD'S TRIPLEX ELECTRIC MINE SINKING PUMP.

The Niagara Electric Transmission.

The Niagara Construction Company, who are now engaged in carrying out the project of utilizing a portion of the vast power at Niagara Falls, deemed it wise to go to the firm of Faesch & Piccard of Geneva, Switzerland, for working drawings for two turbine water wheels of 5000 horse-power each. In designing these wheels the head of water and the amount at the disposal of the projectors was provided, and with this data before them the plans were drawn. Contracts for building these wheels will be let to some American concern.

Sufficient water for the generation of 6000 horse-power has been contracted for by one of the large pulp mills now located near the falls, who will put in their own machinery for the utilization of this power.

Arrangements have already been mad for supplying much of the electricity needed for operating lamps and electric roads in Buffalo, and it has been definitely settled that for the transmission of power to a distance electricity will be used. The company are now considering the several forms of dynamos and motors now used and it is probable that they will shortly come to a definite conclusion as to which they prefer.

It is probable that an establishment will be erected sufficient for the carrying on of manufacturing in distinct and small branches, in which the power will be provided by means of electric motors. The main object in inaugurating an equipment of this kind is to educate the prospective user of electricity in the use of motors, and the plant will be needed to give him an idea of what he pays for, how much he pays for, and how the same is gauged.

WORLD'S FAIR NOTES.

The Extent of the Buildings.

The July map of the World's Fair grounds shows 60 buildings projected at Jackson Park, 50 of which are in process of construction. When the gates are thrown open next May 125 special buildings, with 200 acres of floor space under their roofs, will be within the inclosure. The list of buildings on which work is now being pushed includes the 13 main exposition buildings, 2 annexes, 23 State buildings, the Government Building and above 10 minor buildings for various purposes. The July map shows changes made from old plans and new buildings added. The building for the Indian school has been located at the southeast corner of the grounds.

Among the new buildings just projected is the "Workingman's Home," which is to be erected near the Woman's Building. This home, to be built by the Pennsylvania State Board, is designed to show a model residence for the small wage earner.

On the State buildings 570 men are now employed. These buildings are for the following States: Illinois, Pennsylvania, Massachusetts, Indiana, Ohio, Wisconsin, Virginia, Rhode Island, Kansas, Montana, Connecticut, New York, Maine, Delaware, Maryland, Nebraska, Colorado, California, New Hampshire, Michigan, Missouri, Minnesota and Iowa.

Along the Midway Plaisance will be a group of structures the seeing of which will be equivalent to a trip around the world. Almost every nation will be represented here by some characteristic building, a number of natives, their customs, amusements, &c. There will be pagodas from India, mosques from Turkey, Algerian temples, a village from Ceylon, a palace of the Moors, a village from Germany, and a complete street scene from Cairo, Egypt.

The 84 acres embraced in the north end devoted to State and foreign buildings will be studded with various styles of architecture, all, however, in general harmony. This latter has been secured because of a rule that every building erected must be approved by Chief of Construction Burnham.

Transportation Exhibits.

The New York Central Railroad will make one of the interesting exhibits at the fair. It has decided to reproduce in exact details and full size the first railway train run in America—the old engine, the queer looking coaches and the track on which they ran. Space for this purpose was secured last week.

The particular reason which the New York Central has for exhibiting the first railway train in America is that it ran over that road, known as the Mohawk and Hudson Railway, the first part of the New York Central from Albany to Schenectady. This antiquated train started July 31, 1832, 60 years ago. The engine was imported from England and its name was John Bull. The first cost of the John Bull was \$3763, but before it could be put in operation in this country the freight charges, customs fees, &c., amounted to a total of \$5856. Twelve dollars of this item, it appears, was for weighing. The coaches to the train were nothing more than bodies of stage coaches mounted on wheels. The persons who took the first ride were regarded as starting on a very hazardous expedition. Some New Yorkers were on the train, among them ex-Governor Yates, Thurlow Weed, editor of the Albany Evening Journal, and Major Meigs of Albany. In addition to the train, the company will reproduce full size the Schenectady railway station.

In behalf of citizens of Milwaukee a reservation of 1024 square feet is re-

quested in which to exhibit a complete miniature model in staff of the harbor and city of Milwaukee, Wis., showing its docks, shipping facilities, streets, parks, public buildings and other points of local interest.

Fair Finances.

On Wednesday of last week the \$5,000,000 appropriation bill was voted on in the Lower House. It passed by a vote of 117 to 105. Filibustering tactics were then resorted to on a motion to reconsider, and the House adjourned without further action. Fair directors at Chicago were greatly pleased. It gave to all a new inspiration for carrying on the work. In addition to the \$5,000,000 voted by Congress \$3,000,000 more will be needed, and the task of raising in Chicago \$8,000,000 in addition to the \$11,000,000 subscribed there was regarded as a gigantic task. In fact, the directors had begun planning to reduce expenses and stop certain building plans. There was consequently a great reaction when the favorable news was received from Washington.

It is interesting to know that while every effort is being made to persuade Congress to make the appropriation of \$5,000,000 necessary to the success of the fair, the Chicago directors do not intend to be caught napping and are now arranging to secure the money from other sources should the Government fail them.

This matter has not been discussed in any regular meeting of the directory or Executive Committee, but the ground has been thoroughly canvassed by those who are most deeply interested, and it can now be said that a method of solving the difficulty has been arrived at. In this, as in many other things, the directors have decided to follow the example set them by the French, who have always made their international expositions successful in every sense. There are members of the directory who really hope that Congress will refuse to make the appropriation. They are of the opinion that it would be better to borrow the money needed and keep the exposition open on Sunday than to accept the gift from Congress with the Sunday-closing attachment. One of these gentlemen yesterday had the following to say:

"After Congress adjourns we will know just what to do. If the appropriation is made everything will run along without trouble. If Congress refuses relief we will issue bonds bearing 4 or 5 per cent. interest, and every one will be sold within 30 days. These bonds will be gilt-edged security, being secured by mortgage on the gate receipts. Such preferred bonds were issued in Paris, and they were greedily bought up by capitalists of Berlin, Paris and London. The most clear-headed financiers in the country have given this matter thought, and it is absolutely certain that no difficulty will be experienced in raising the funds."

French Engineers to Make a Visit.

Marquis de Chasseloup Laubat and his brother, Count Laubat, distinguished civil engineers, arrived at Chicago from Paris last week on an important mission. They came to make arrangements for a large number of civil engineers who are coming to Chicago next year to attend the conventions of engineers that are being planned by the World's Congress Auxiliary. The Marquis said that it was probable that the entire society of French engineers would come in a body.

A Geological Congress.

Geologists of all countries are expected to be in Chicago next year to attend an international congress to be held early next July. Arrangements for such a congress have been completed by President Bonney of the World's Congress Auxiliary. The

scientist who attend are assured that their talks will not be lost to the world. Arrangements will be made to secure the publication of the proceedings of the congress and the important papers presented at the sessions. These publications are to be a memorial of the civilization of the nineteenth century. Every subject of interest will be considered. Dr. Joshua Lindahl, State Geologist of Illinois, has been appointed chairman of the Committee on the Geological Congress. His address is at Springfield, Ill.

A Useful Hardening Process.

For ordinary purposes it is safe to say that the best results in hardening steel tools and other articles of this material are obtained from the use of pure soft water as the cooling medium. There are many so-called "improved" processes, consisting of baths composed of various mixtures, for which more or less superiority over the old-fashioned method is claimed. As a rule, however, their merits are more imaginary than real, as a fair comparison with water would demonstrate. Water has, among other advantages, that of cheapness; consequently it may be changed as often as necessary to keep its temperature very little above normal. Where brine, acidulated water or any of the various mixtures are used it often becomes necessary to suspend operations in order to give the bath time to cool down sufficiently to give the required degree of hardness to the steel. This, of course, is only a matter affecting the convenience, and would not be considered a serious objection were the results, as regards quality of the work, superior to those obtained from the use of clear water. The latter medium, however, may safely be considered the standard, and all other methods should be rated in comparison with it.

Still, there are special effects resulting from the use of some of the mixtures which cannot be obtained from pure water; and frequently the former are employed for that reason. For instance, solutions of salt brine, sulphuric acid and sal ammoniac have the effect of cleansing from the film of scale usually unavoidable where the heating is done slowly, which is the only way to obtain the proper uniformity of temperature throughout the entire mass of the article. Oils are employed almost universally for hardening such articles as do not require, either primarily or permanently, the full degree of hardness of which the steel is capable; and in many classes of work of this character the subsequent operation of drawing the temper is entirely dispensed with. Of course this would not be possible for articles requiring a fine temper, but for such as it is suitable for it effects considerable saving of labor, and, consequently, of cost.

When the highest possible degree of excellence of temper is necessary, it can only be obtained by slow, uniform and careful drawing, from full hardness. If it is desired to gauge the temper by color, the particular tint or shade due to the desired degree of hardness will not be a reliable guide unless the primary hardening be thorough. The use of mercury as a hardening bath—though long known—is not universally nor even extensively understood, and even were the results from its use entirely satisfactory, it is doubtful whether it would ever come into general use, on account of the expense of the metal. The process, however, does not give any better quality of work than can be obtained from water—that is, as ordinarily used—and it may be questioned whether the advantage would not prove to be decidedly in favor of the latter.

A very simple and inexpensive modification of the process has been discovered,

the effect of which is very marked—surprising, in fact—and more particularly so as the means employed would seem wholly inadequate to produce such a result. Of course, where the highest degree of perfection is attained it can only be through great care and skill in the manipulation, both in heating and cooling, and this, added to a thin coating of borax, and the mercury cooling bath, constitutes the process. For all fine work a clear flame from charcoal fire is always preferable to blacksmith's coal. Great care must be exercised to prevent an excess of air from the blast, as, otherwise, the oxidizing action is very rapid and causes scaling, as well as deterioration in the quality of the steel. The use of charcoal fire admits of the work being in plain sight during the entire heating, and it can, therefore, be turned and shifted as required, in order to obtain perfect uniformity of temperature. Gradually heated to a barely visible red (in shadow), the article should be withdrawn from the fire and carefully covered with borax—the latter being, preferably, previously fused and pulverized. It will adhere to and glaze the surface like a coat of varnish.

As the heating progresses it may be necessary to repeat the application of borax to insure an absolutely perfect covering. The temperature may then safely be raised to a degree very considerably higher than would be safe were the steel unprotected from the action of the flame. A full bright red for high tool steel is perfectly allowable, while without the borax the limit would be the traditional "cherry red." To insure perfectly uniform heating in all portions of the article it should be maintained at the required temperature for a sufficient length of time to allow a "soaking" or equalizing action, and immediately upon this point being assured the work should be quickly withdrawn from the fire and plunged into the mercury. It is of the utmost importance that the immersion be prompt and complete, and that the work be kept constantly moving about in the bath in order to prevent the local heating of the mercury and a consequent formation of mercurial vapor, which would interpose a film between the steel and liquid metal, and by preventing actual contact interfere with the rapidity of transmission of the heat of the steel into the mercury. Also, the article must be kept continuously in the bath until its temperature and that of the bath have become very nearly equalized, as, should its withdrawal be premature, there is not only a loss of the full possible degree of hardness, but the danger of warping and even breakage is imminent.

While the result of failure to comply with these necessary precautions will almost invariably be a complete failure, their careful observance will insure a quality of work which may almost be said to defy comparison with any other known method. The steel comes from the bath perfectly free from oxide or scale—due, of course, to the protection from atmospheric contact by the coating of borax. If any of the latter substance still adheres, its removal is easily effected. Occasionally some portions of the surface are coated with mercury—apparently by amalgamation, but it also is readily removed. The most highly finished articles may be hardened in this manner, and their polished surfaces come from the bath intact, except as to having assumed a whitish color.

But the most remarkable result is in the great strength and hardness of the steel. By all other known processes extreme hardness is always attained at the expense of strength—that is, the greater the degree of hardness the more brittle under a breaking strain will it become. Strange as it may seem, however, by the process under consideration the strength and hardness

appear to increase alike, and therefore the necessity for the subsequent operation of tempering, except where a very low degree of hardness is required, becomes unnecessary. To illustrate the superiority of the results obtainable by this process, a very simple demonstration will suffice and cannot fail to convince the most skeptical.

From a bar of ordinary carbon tool steel about $\frac{1}{4}$ inch square cut off two pieces, each about 6 or 8 inches long, and from these make (by grinding or filing, but without forging) two gravers such as are used for hand turning. As the desired quality in such tools is hardness only, the tempering process is always omitted. Harden one of the gravers by the ordinary water process, and the other by the mercury and borax. After hardening they should be ground on a wet grindstone, and a keen edge given by an oil stone. The diamond-shaped faces forming the ends of the tools should be fairly smooth, as it is the most convenient surface on which to make the test. Place the mercury hardened tool in the vise with the diamond face in a horizontal position, and grasping the other firmly in both hands, place the point against the face of the first, using all the pressure possible—then push, slowly and firmly, and endeavor to cut a groove in it. The result will be failure, try as often as you will. Either the fine point of the attacking graver will snap off, owing to its want of strength, or it will be dulled and blunted, like a piece of soft steel. Now, reversing the operation, let the attack be made by the mercury-hardened tool on the face of the other, and a clean groove and corresponding chip will be cut from it without any serious damage to the aggressive point, though, of course, it cannot stand it indefinitely. If the test be repeated, it will invariably give the same result, provided the mercury hardening has been properly done.

Another convincing test is that of drilling. This will demonstrate not only the hardness, but also the wonderful strength imparted to the steel, which, in case of the graver test, is not nearly so marked. Take an ordinary flat drill—say about $\frac{1}{8}$ inch diameter—and harden it carefully, after forging a new point to insure against cracks or flaws from previous use. Grind (wet) the angle of face about 60° with relation to the axis. The angle of clearance back of cutting edge should be very flat, to give the greatest strength to resist the strain of cut. Place the drill in a heavy-gear drill press, or, preferably, a back-gear lathe, as the latter is much stiffer than a drill press, and any appreciable amount of springing or yielding under the strain is fatal to any attempt to drill hardened steel. Put the lathe on slowest speed in gear, and all is ready for the test. About as convenient a test piece as possible is an old file—say about half worn, to make sure its full hardness has not been impaired. This should be placed against the drill point and forced up solidly against it by means of the dead spindle; then start the lathe and feed up, by main strength, or the only effect will be to dull the drill. If the manipulation is correct the drill will cut the hard steel, the chips falling in the shape of fine needles, the full length of cutting edge of the drill, and a clean, true hole can be made entirely through the file.

When it is considered that a great increase is necessary in the hardness of the drill over that of the material to be drilled, it will be appreciated that the hardening by this process must be of exceptional character. Also, that the tremendous strain supported by the point of the drill at starting the hole—when the full power of the operator must be applied to insure its cutting—gives evidence of the strength imparted to the steel.

By way of comparison, let the same drill with which the file has been drilled be an-

nealed and rehardened and tempered as for ordinary shop use. Try then to drill, say, a saw blade, which is soft enough for easy filing. If it cuts at all it will only be for a few revolutions, when it will begin to "squeak," and finally refuse to cut. Now reharden to full hardness, and try to drill the saw. It will cut, so far as mere hardness is concerned, but will fly to pieces immediately it gets fairly to work, being brittle as glass.

As to the causes of the peculiar effects from this method of hardening, be they chemical, physical, or both, there does not appear to be any very satisfactory explanation. Of course the greater thermal conductivity of mercury, as compared with water, notwithstanding its much lower specific heat, will account for a more rapid cooling of the steel, and as the change of molecular structure of the steel will be dense in proportion to its rapidity, it would seem that this point was sufficient to account for the result. But this hypothesis is untenable, from the fact that the use of the mercury bath alone does not give the result, and it is only obtained when the former is used in connection with the borax treatment during heating. A microscopic examination of the structure, as shown in a fracture, reveals a very marked difference between the two methods, and even under the naked eye the peculiarly fine grain of the mercury-borax specimen allows of its being readily distinguished. However, while the cause may be problematic, the effect is not so, and therein lies its principal importance.

The Jobbing Mill Scale.

At the time the members of the Iron and Steel Sheet Manufacturers' Association agreed upon a wage scale governing sheet mills with the Amalgamated Association it was decided that all concerns operating jobbing mills should arrange an individual settlement with their employees for the purpose of settling any differences. For this purpose a meeting was held in the office of the Iron and Steel Sheet Manufacturers' Association, in the Times Building, Pittsburgh, on Tuesday, the 26th ult., the following named concerns being represented: Shoenberger & Co., Pittsburgh; Standard Iron Company, Bridgeport, Ohio; Etna Iron & Steel Company, Bridgeport, Ohio; Arethusa Iron Works, New Castle, Pa.; Sharon Iron Company, Limited, Sharon, Pa., and Riverside Iron Works, Cincinnati, Ohio. In the jobbing mills operated by the above concerns, where tank iron No. 10 and heavier and over 48 inches wide is rolled, the roller, after paying all his help, receives \$1.35 per ton. In plate mills where similar work is done the roller, after paying all help, receives but 72 cents per ton. From this it will be seen that the first-named class of mills are operating at a decided disadvantage, and for the purpose of doing away with the large difference in labor the manufacturers submitted a proposition to their employees, which was as follows:

Mills rolling 48 inches or wider sheets in No. 18 and heavier gauges exclusively shall, when working No. 10 and heavier, be classed as plate mills, and pay scale of wages in accordance therewith.

These manufacturers contend that their output is brought into direct competition with similar output rolled in plate mills, and which is turned out for about one-half what they are compelled to pay. The proposition as noted above made by the manufacturers has been taken under advisement by the Amalgamated Association, and another conference will be held some time during the present month. The understanding is that any mills that continue to run in the meantime will have to pay prices for such work as called for in the scale of wages governing sheet mills adopted some time since.

The Rohan Sheet-Metal Trimmer and Cutter.

Two of these machines—one for cutting plates $\frac{1}{2}$ inch thick, and the other for plates $\frac{3}{4}$ inch thick—have been built by the Rohan Bros. Boiler Mfg. Company of St. Louis, Mo., and are now in successful operation.

In the frame 1 are journaled two shafts, 2, 3, connected by the pinions 2a. One of these shafts has a driving wheel, 4, engaged by a worm, 5, on a shaft provided with a tight and loose pulley, 8, and fly wheel, 9, as shown in Fig. 2. The worm wheel is loose on the shaft, and has a

the frame. It will thus be understood that when the shaft 18 is rocked the collar 11 will be moved out of and into engagement with the hub of the worm wheel, and by this means the machine can be easily thrown into and out of gear. The shaft may be rocked by a lever, 19, Fig. 4, or by a lever, 20, Fig. 1, on a countershaft, 21, which has a gear connection, 22, with the shaft, so that a person at either end of the machine can throw it out of or into gear.

A sliding head, 23, is journaled to the shaft 2, and a sliding head, 25, to the shaft 3. There is a pair of heads at each end of the machine, and these heads are

The heads are moved by means of the racks 29, secured to the frames and engaged by pinions 30 on the ends of shafts 31, journaled in the heads. On the shafts are ratchet wheels 32, engaged by double-acting spring actuated pawls on the levers 34. By moving the levers the shafts will be turned, and through their connections with the stationary racks will cause the heads to be moved along the shafts in either direction desired.

In order that the shafts 31 may not interfere with the passage of the sheets through the machine, each of them is formed in two parts connected by a sleeve which has a feather and groove connection

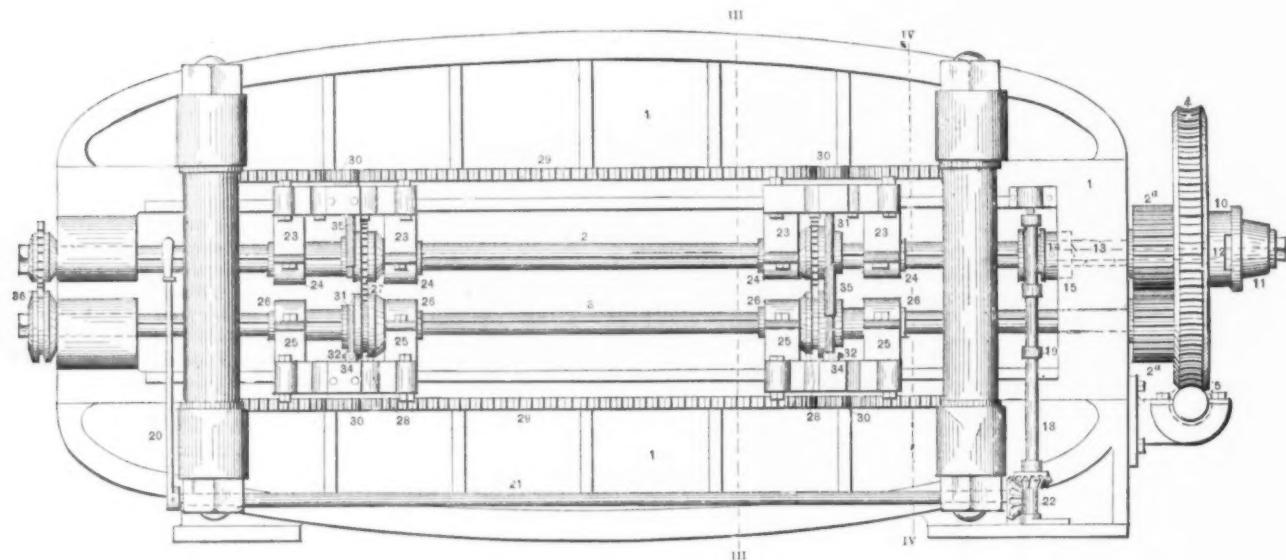


Fig. 1.—Front Elevation.

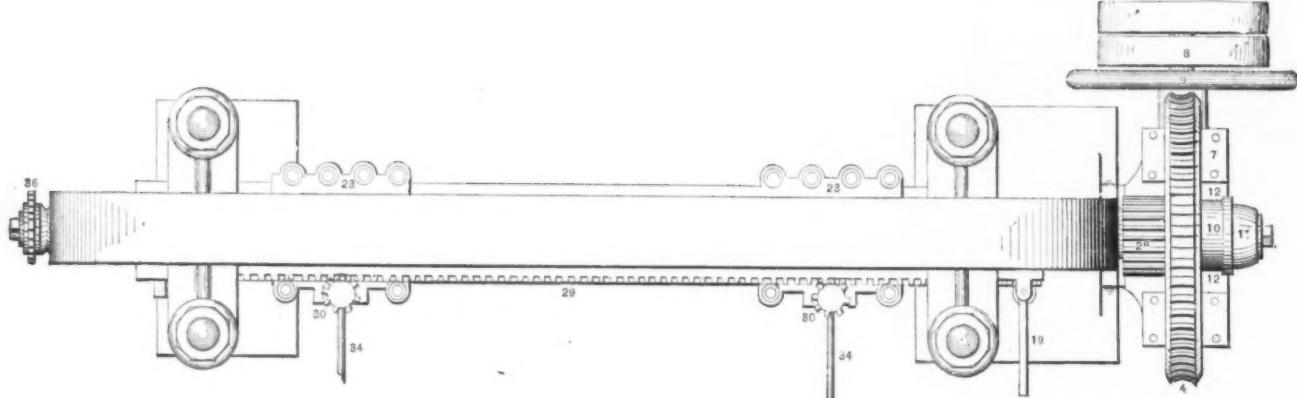


Fig. 2.—Plan.

THE ROHAN SHEET-METAL TRIMMER AND CUTTER.

notched hub, 10, for engagement with a sliding collar, 11, on the outer end of the shaft. The collar has a feather and groove connection with the shaft and has lugs, 12, for engagement with the notches of the hub of the worm wheel. The outer end of the shaft carrying the worm wheel and collar has a central bore or opening, in which fits a rod, 13, made fast at its outer end to the collar and having a pin, 14, passing through its inner end and through a collar, 15, which slides on the shaft, having a feather and groove connection with it. The shaft is slotted to receive the pin to permit the collar and rod to be moved endwise along the shaft. The collar has a circumferential groove to receive pins 16, Fig. 4, on the levers 17, secured to the rock shaft 18, journaled to

held to the frame and provided with suitable ways along which they slide, as shown in Fig. 3. Circular disks, 27, formed with notched peripheries are mounted on the shaft with a feather and groove connection. These disks are respectively embraced by the heads 23, so that by moving the heads the disks can be shifted along the shaft. Grooved dies, 28, have a feather and groove connection with the shaft 3, and act in conjunction with the disks 27 to do the cutting or trimming of the sheets. These dies are respectively embraced by the heads 25, so that by moving the heads the dies can be shifted along the shaft to correspond with the adjustment of the disks. It will thus be seen that the cutters (the disks and dies) may be adjusted to trim any width of sheets.

with the shaft. After the heads have been adjusted the sleeves may be raised up as shown at the left hand of Fig. 1, so as to separate the two parts of the shafts and admit the passage of the sheets.

A pair of cutters, 36, like those, 27, 28, located on the outer ends of the shafts 23, may be used, when desired, for trimming or cutting sheets or pieces of metal.

The machine is well adapted to be placed at the delivery side of the last or finishing pair of rolls of a sheet metal mill to receive the sheets as they come from the rolls and trim their edges or cut them up into narrower sheets.

Canadians represent that the proposed tax of \$2 at the Sault would close Lake Superior to Canadian boats.

An Important Change.

The Illinois Malleable Iron Company of Chicago have purchased the stock, good will, machinery, fixtures and lease of the trustees of the Fieldhouse & Dutcher Mfg. Company, at 30 and 32 West Monroe street. The sale has been talked of for some time, but was not consummated until June 24. Immediate possession was taken.

The firm who retire from the field were organized in 1873 and incorporated in 1887. Formerly they were known as Fieldhouse, Dutcher & Belden, but some years ago C. W. Belden retired, taking the Chicago agency of other manufacturers. The company have always enjoyed a large city trade, and, notwithstanding financial difficulty was encountered, they have always had the confidence of the trade. When the company failed the creditors elected trustees, who have since carried on the business as successfully as is possible under such arrangements.

Monroe street, will carry a full line of plumbers' and steam fitters' supplies. The stock on hand is unusually complete, and the business of the old firm will be pushed. The larger portion of the force connected with the old company will remain with the purchasers. The general offices of the Illinois Malleable Iron Company have also been moved to the downtown store. The officers of the company are: H. E. Bullock, president; J. E. Bullock, treasurer, and W. H. Stockham, secretary.

Tin Plate Works of Marshall Bros. & Co.

We learn that Marshall Bros. & Co. of Philadelphia, Pa., are contemplating the abandonment of their old Penn Treaty Works at Front street and Girard avenue, with the object of removing the tinning plant now in operation there to a more convenient locality adjoining their rolling mills at Beach and Marlborough streets.

ment is to be annexed, is favorably situated on the river front, with a side track running through the length of the works in direct communication with the Pennsylvania and the Philadelphia & Reading railroads, shipment of goods both by land and water being thus rendered conveniently easy. Two complete tin mills, with all the necessary adjuncts of shearing and doubling machines, &c., well equipped in every respect, are included in the works. These mills have been for a considerable time kept busy running day and night on eight-hour shifts, in order to provide material for the tinning department. Their present output is 200 boxes per day; and we are informed that the company find an easy market for all the plates—both bright and terne—that they can produce. There is ample room for placing additional tin mills in the building, and the company propose adding two more shortly, which will double their present capacity of black sheets. All the steel billets used in these mills are obtained from the Pittsburgh district, the pig tin being from the Temecula mines, and the labor employed exclusively American. A large amount of steel and iron sheets and plates for general purposes are also produced at these mills, their capacity being 150 tons over the quantity used for tinned plates. The main building, measuring 135 x 400 feet, contains breaking down and finishing mills, producing bars of all sizes from 1C, No. 30, down to 4X, or No. 24, gauge. Also two plate mills rolling light plates from $\frac{1}{4}$ inch up to No. 16. Each mill is fitted with a separate 10 ton crane, while a system of trolleys throughout the building facilitates the transport of material from one part to another. Power for running the mills is supplied by five horizontal slide valve engines having an aggregate capacity of 1650 horse-power.

In addition to the rolling mill proper the works embrace a new building containing two large annealing furnaces and pickling tanks for treating the black sheets intended for plating with tin or lead preparatory to their undergoing the cold-rolling process, which is at present carried out at the Penn Treaty Works. A machine shop for repairs and fitting the rolls, carpenter's shop, storerooms and offices, all excellently arranged for efficient service, form a part of Marshall Bros. present rolling mill establishment, although mention should be made of an artesian well 504 feet deep, on the company's premises, and sunk by them, from which an abundance of pure water is obtained for all purposes.

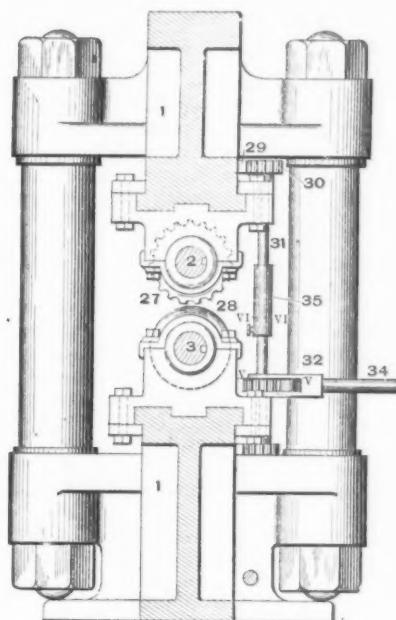


Fig. 3.—Section on Line III III of Fig. 1.

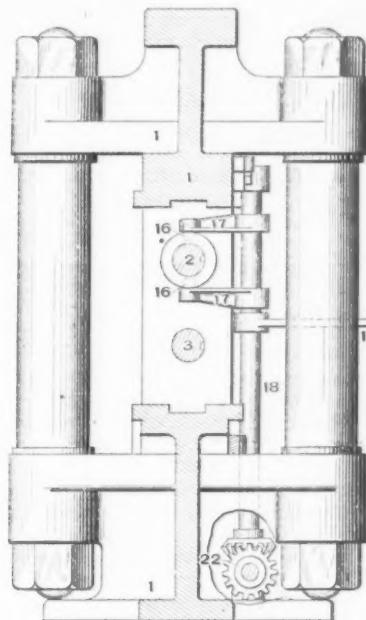


Fig. 4.—Section on Line IV IV of Fig. 1.

THE ROHAN SHEET-METAL TRIMMER AND CUTTER.

The Illinois Malleable Iron Company were established in 1880 by H. E. Bullock at Rochelle, Ill. In 1884 the business was moved to 579-599 Diversey avenue, Chicago, and incorporated under the present name. In 1886 the works were entirely destroyed by fire, a large share of the patterns was lost and all of the machinery badly damaged. The works were rebuilt and started early in 1887.

Prosperity has attended the business, and 8 acres across the Northwestern tracks were recently purchased, on which another iron foundry is now being built. When completed their force will be increased to 400 hands. Until 3½ years ago they confined themselves to malleable and a few steam goods. At that time the manufacture of plumbing specialties was begun. They will continue the manufacture of their Chicago stop cock box, the valve boxes and street washers. They are just putting on the market the Osborne seal fittings, which reduce the cost of steam fitting for large buildings, and they are also bringing out a patent union and other patent fittings for steam fitters.

With their greatly increased facilities they will enlarge their line of manufactures, and at their store, 30 and 32 West

A piece of ground, 150 x 90 feet, on their own property, between the mills and the Delaware River, will be utilized for the purpose of accommodating a suitable building, which will be erected, to contain the tinning plant, some puddling furnaces now occupying a portion of the space being torn down. This projected alteration will serve to consolidate the company's business, and will save time and expense now consumed in the transfer of material from one establishment to the other. A new wharf, to facilitate water transportation of goods, will also be among the additions to be made. With these improvements, Messrs. Marshall Bros. will possess one of the most complete and compact tin-plate factories in the country. By the arrangement of the mills and tinning houses the process of manufacture will be a forward one, the material being passed through the various stages, from the breaking down mill for the steel billets to the finishing and packing of the completed tin plates, in direct succession from one end of the establishment to the other, without any necessity for retrogression during the processes of manufacture.

The present rolling mill of Marshall Bros. & Co., to which the tinning depart-

The Building Department of Chicago has issued a report for the first six months, which shows an increase of \$4,962,815 over the corresponding period of 1891. The figures are as follows: First six months of 1892, \$27,840,515; 1891, \$22,877,700. These figures do not include any of the World's Fair buildings, which would greatly swell the totals for both periods.

During the month of June the big steamer Maryland made a remarkable showing in the iron ore trade between Escanaba and South Chicago. The boat loaded in Escanaba during the month eight cargoes, aggregating 27,221 gross tons, and averaging 3401 gross tons. The largest cargo was 3507 gross tons and the total of miles run about 4720. Considering the character of the material handled this is looked upon as a notable achievement.

The German Government has expended \$400,000 in building a factory at Spandau for the preserving of all kinds of provisions for the army, and about 550 operators are to be regularly employed there.

Another Chicago Elevated Assured.

There can no longer be a shadow of doubt about the certainty of a West Side elevated railroad, says the Chicago *Tribune*. The Metropolitan "L" road will be built. All the important details of its financial plan have been fully worked out. Ten million dollars of securities have been disposed of. Work is to commence at a number of places on the line the moment the surveyors have completed their work, and the construction will be pushed with all the energy that ample capital can throw into an enterprise. The projectors expect that a year from to day the road will be in operation. There is none of the tedious financing in this enterprise that so long hampered the South Side road and is still blocking the Lake street scheme. The company now have in hand ample capital for all requirements. The floating of its first block of \$10,000,000 5 per cent. bonds has been completed. The road will be constructed by the West Side Construction Company. This is an organization with a capital of \$3,000,000. The same general scheme will be followed that was worked so successfully in the financing of the South Side road. A contract has been made with the Construction Company to build the road, and that company has received all the stocks and bonds of the Metropolitan Elevated Railroad Company. The West Side Construction Company has, in turn, disposed of these bonds and a portion of the stock, so that the funds are in hand for the immediate construction of the road. The Construction Company disposed of the bonds to American and English capitalists on a basis of 90 per cent. for the bonds, with a bonus of 25 per cent. in stock. That is, for every \$900 subscribed, the subscriber receives a \$1000 bond and \$250 in stock.

The plan of the company for crossing the Chicago River and securing a downtown terminal is to build what is known as a "bascule" bridge. The general manager of the company will be E. W. Eckart, an eminent engineer, and he has worked out the plan for crossing the river. The bridge will be similar to those now in use across the Mersey and over the Thames. It will be 45 feet above the water. It will open in the middle, and each half will be raised with the shore end as a fulcrum, the center rising in the air. The operation of the bridge might be described as something similar to the opening of a jack-knife, the weight of the bridge being balanced by counterpoised weights.

The road will be built from Fifth avenue west between Van Buren and Jackson streets to Sangamon street. At this point it drops down a block to the alley midway between Van Buren and Congress streets. It is carried directly west to a north and south alley between Wood street and Ashland avenue. This might be called the end of the trunk line. A line runs north and south on this alley between Nineteenth street and Milwaukee avenue. This line will be carried out northwest parallel with Milwaukee avenue and west on Nineteenth street to the Grant Locomotive Works. Two other branches are to be extended west from the north and south line at intermediate points. One line will be carried out directly west to the park system.

"Work on the road will from this moment be pushed with all the energy it is possible to put into an enterprise," said a Chicago capitalist, who has taken a block of the bonds. "The conditions under which construction will begin could not be more favorable. The company have all the money at instant command that they can make use of. Everything that will be needed will be bought at the lowest cash price. The company are entering the market at a particularly favorable time, so far

as their iron purchases are concerned. The iron market is extremely depressed, and prices are as low as they were ever known. All the experience which has been acquired in the construction of the South Side road will be available, and there will be many points where this company will be able to work at a better advantage than the South Side company did."

Importance of Cut-Off Couplings.

There are laws—either National, State or municipal—for regulating the use of some things which may be considered of dangerous character, by which may be menaced the safety of life and limb of those coming within reach of their possibly destructive influence. Such restrictions as past experience or scientific knowledge would suggest are imposed upon the users of various dangerous agents and devices, and undoubtedly have the effect of very materially reducing the degree of danger from their use. In the case of steam boilers, for instance, the inspection laws pre-cribe the compulsory use of certain appliances and methods which are known to render them comparatively safe, and without which they are a source of untold danger. If such safeguards are possible with reference to the primary factor in the production of power, there does not seem to be any plausible reason why, as a logical sequence, all available appliances for decreasing the dangers incident to its transmission and use should not be prescribed by legislation. One of the most fruitful sources of accident in this connection is caused by the line shafting, and more particularly is this the case in large establishments where a large amount of power is used. The danger lies in the fact that the shafting will continue to revolve just as long as the load or resistance is less than the transmitting capacity of the driving medium. No matter what entanglement of belts or machinery may happen, the relentless whirl goes on, grinding, tearing and destroying, and unless the engine or other prime mover can be stopped promptly, the damage ceases only when the destruction is complete. In case of accident or any emergency requiring the stoppage of a particular line of shafting, if shutting down the engine is the only means provided a very considerable interval must elapse, no matter how promptly it is done, before the motion can be entirely stopped. In large buildings of several stories, having one or more lines of shafting in each room, it is not only a difficult matter to promptly stop an engine of a size necessary to furnish such a large amount of power in time to prevent disaster; but also the expense attending such stoppage must be very considerable. That there are numerous devices for obviating this necessity is a matter of general information. Cut off couplings, both efficient and universally adaptable, are to be had by paying their price. Owing to the care and perfection required in their construction they are necessarily expensive as compared with an ordinary coupling—even of the modern "detachable" form—and for this reason only their use, as a rule, is limited to such places as absolutely require to be independently controlled. The fact that some of the more progressive establishments have provided such safeguards simply serves to point out what all might and should do were a proper care for the safety of their operatives observed, to say nothing of the saving of expense from the frequent stoppages of the entire establishment for every trifling belt-lap or similar mishap. In large mills and factories where female and child labor are almost exclusively employed, accidents, trifling or serious, are of frequent occurrence. In the majority of cases serious results might be prevented by a prompt

stoppage of the line shaft furnishing power at the point of difficulty, and with a cut-off this can always be accomplished in a very few seconds. Without it, depending on stopping the engine, it becomes a matter of minutes, and is generally too late. In most establishments, except of the smallest size, there are two or more lines of shafting. From both humanitarian and economic standpoints each should be provided with its independent means of stoppage. Either the main driven pulley receiving the transmission or a contiguous coupling should be furnished with a friction clutch, whose shifting device should be within easy reach from the floor. The reliability of action of the several standard makes in the market has been thoroughly established, and the selection of any particular one becomes a matter of individual preference. As to the moral considerations very little need be said. Every proprietor or manager of a manufacturing business is fully aware as to the danger to life and limb from the use of machinery, even when every known safeguard is provided, and if he shall willfully neglect to provide such as may be available, it is to be feared that moral suasion will fail of effect, and that nothing short of compulsory influence will meet the difficulty.

But selfish motives may prevail with selfish people. Dollars and cents are the mighty factor which—being the great "means to the end," as well as the end itself—will generally prove effective in deciding such questions. On this basis, then, the subject is capable of consideration. Take for illustration a textile mill employing 500 operatives whose average rate of wages is 10 cents per hour. The power is transmitted to the different machines by, say, ten lines of shafting—each driven independently of the others from the engine or jack shaft. The operatives, being equally divided, will average 50 to each line of shafting. In case of necessity for stoppage the very least loss of time will be five minutes (generally considerably more), and in a mill of this size, it would not be exceptional for this to be of daily occurrence, or at least as a mean, which for 300 working days would aggregate 12,500 hours per year. The loss would be then 12,500 hours (for 500 operatives), \times 10 cents = \$1250. Now, had each line been provided with a cut-off, only the one where the trouble occurred would need to be stopped, and the loss of time would amount to but one-tenth of the above, or \$125 per annum—a saving of \$1125. As this would be approximately the extra cost of the friction couplings, it looks as though they would pay for themselves in one year. This is good economy, to say nothing of the possible saving of payment for damages for personal injury of employees.

While this showing may not be applicable in all cases, particularly where the number of employees is small proportionately to the liability to accidents and consequent necessity for frequent stoppages, it will undoubtedly fall short of the facts as an average of the possibilities. A resort to legislation or any compulsory means for meeting the necessities of the case would perhaps be considered arbitrary and uncalled for. Possibly it would be; but were the matter to receive such attention as its importance deserves from power users in general, there is but little doubt that the use of cut-off couplings would become universally considered as a necessity.

In this connection it may be permitted to say a word with reference to a fruitful source of accident from shafting, which is the projection of set screws from pulley nuts, loose collars, &c. Very innocent looking things they are, certainly, when the shaft is not in motion; and yet how firm and relentless is their grip when once

a sleeve or loose portion of a garment is seized. Their motion, whether fast or slow, goes on steadily and uniformly. The power of the shaft is practically unlimited as regards the slight resistance of muscular strength, and there is no time to think, much less to act, before the entanglement is so complete as to render the only possible hope of rescue the instant stoppage of the shaft. Even if this is accomplished, it would be almost a miracle if the unfortunate victim escapes without the loss of a limb, or other serious injury. Those who have witnessed the terrible spectacle of a workman caught thus, and being whirled around with the revolving shaft, can appreciate the almost criminal culpability of those who are responsible for permitting the existing of such a harmless looking trap, especially as it is so easily avoided. Flush setscrews in collars will give sufficient hold, or, if not, all manufacturers of transmission appliances make safety collars in which the head is protected. In pulley nuts, there is but little danger from the screw heads if they do not project unnecessarily. If exposed, they also can be protected.

The Rule of the Advisory Committee.

The staff correspondent of the Philadelphia *Ledger* describes as follows the situation at Homestead:

Strange as it may seem to the outside world, the hard-working people of Homestead treated the action of the Carnegie Company in sending Pinkertons there just as the frontiersmen of colonial times would have regarded the advent of a band of savage Indians. They were wrought up to a pitch of excitement which made even the kindest-hearted of them believe that their homes were at stake. The Amalgamated men, with their well-drilled organization of eight lodges, though a minor part of the population, took the lead in the preparations for offensive and defensive war; none dared dispute, for without the skilled workers the great body of the laborers and mechanics knew that their services would be discounted. And, more than all, the borough government during the last three years had passed over to the control of the Amalgamated men, so that what was done was done with the sanction of the leading men in charge of public affairs. An Amalgamated man had been elected Burgess. Five of the nine Councilmen were members of the association, while six of the nine members of the School Board also owed allegiance to it. The three regular policemen of the town were ex-members of the association, and so the influence of the union permeated every factor in municipal affairs.

It was under this régime that an Advisory Committee, which met in secret, arose to direct the affairs of the town, and that 65 workmen, anxious to serve without pay, were authorized to act as fire police men and co-operate with the regulars in preserving order. It was under this system that authority was given and responsibility divided, that pickets were thrown out along the river banks and railroads, that virtual possession of the works was taken, that strangers were arrested and taken before the Advisory Committee or driven out of town—in a word, it was under this system that the workmen seized the town and held it against the Sheriff of the county and all other authority until the militia came.

The reign of the Advisory Committee was in many respects an arbitrary one. It required all the members of the Amalgamated Association, mechanics, day laborers and others, to report daily at headquarters between 6 and 7 o'clock, morning and evening. It prohibited the discussion of the wage question in barrooms, stores or other public places. Its notices were

posted in the Post Office of the United States Government, and a violation of its orders would instantly put a man under the ban of suspicion. A few words from its chairman would have been sufficient at any time to admit a man to or expel him from the town. The Burgess merely directed inquirers to headquarters. All the time every man of the Advisory Committee and every special policeman and every self-constituted officer professed an undying love for law and order. They professed to protect the people of the town, both before and after the Pinkerton raid, but they could not see that any stranger who would not tell his business had any right to exist at all in Homestead. With them, to be a stranger looking for work was a punishable crime, while to be an emissary of the Carnegie Company was unpardonable. To resist arrest for the merest suspicion was equivalent to immediate condemnation and dangerous in the extreme, for it required just a little commotion like this to mobilize the idle Homesteaders in any quarter of the town. There was no appeal from a steel worker special—he judged the case and the crowd did the rest. Quite a number of indignant travelers learned how wise it was to keep silence and obey the orders any one might choose to give in Homestead. The Advisory Committee consisted of about 50 men, selected by the eight lodges of the Amalgamated Association, and its sway over Homestead was as complete and terrible, comparatively, as that of any arbitrary power in the troublous days of France.

San Francisco News.

The burning question nowadays is whether there is or is not enough tin ore in the Temescal district to pay the expense of working. Political difficulties are here allowed to befog a practical question. People are not interested so much in finding out whether the McKinley tariff bill is going to foster the production of tin in the United States from native ores, as in finding out whether it is practically possible to make the ore in any particular district pay. The *Examiner* of this city, which is the organ of the faithful of the Democratic persuasion, and, by the way, a very able and unusually well edited paper, has for about a week been engaged in publishing a series of violent attacks on the people who are managing the mine at Temescal. Its charge virtually is that the ore at the mine was only a pocket or a series of small pockets which had been worked out; that not enough ore was taken out to pay the wages of the workmen and that there was no ore in sight, the impression being produced on the mind of the reader that the whole thing was a swindle and that the English stockholders were the victims. The gentlemen at the mine deny the charge point blank. Gervais Purcell, the general manager of the English Southern, which owns the Temescal mine, says: "We are now running two batteries of pneumatic stamps and one five-stamp California mill, night and day, and they cannot get ahead of the ore supply on the dump. The Cajalco lode is a true fissure vein and increases in size as it descends. The surface prospect in the immediate neighborhood shows that tin is carried in many of the other unexplored lodes. The mine generally shows better prospects than at any time since its inception. New machinery is being put in and the work is being vigorously pushed."

The only point on which there seems to be an agreement is as to the quantity of tin that has been produced, that is, 150 tons, some of this has gone East, while a few parcels have come to this city. All outsiders are now kept away from the

mine, as the article published by the *Examiner* was purported to be furnished by an engineer who had been employed at the works. It is certain, of course, that a great deal of money has been spent in the development of the mine, a couple of millions, it is said, and of course it would take about 9,000,000 pounds of tin to pay for this. It may also be granted that up to the present the income is much less than the outgo. It must be remembered, however, that a good deal of money must be sunk in the inception of every enterprise before any adequate return is received. It would require the production of 20 tons a month over the quantity required to pay expenses to net a return of 5 per cent. to investors. It produced just this amount in February. The most that can be said at present with certainty is that the management at the mine are engaged very earnestly in the work of development. That this work has not as yet brought about results sufficient to pay running expenses, but that the management are confident that the time is not far distant when this condition of things shall be reached. The probabilities favor the presumption that there is a good deposit of tin and that the mine will ultimately pay. We have here in San Francisco a market for 1000 tons annually.

The market here at present seems to be pretty firmly held at 24 cents. We have had large imports of tin plate during the past two weeks—28,795 boxes per Holt Hill, and 6954 boxes per Manx King. This brings up the total of importations this year to date to a little over 300,000 boxes. The market is down to \$5.80 for spot, and \$6 to arrive. Imports of iron, steel and wire, &c., by sea, have been large, they having formed the principal part of the cargoes of four large clippers, one from New York, the rest from Europe. The Shenandoah brought 899 tons of Alabama pig iron, a part of the purchases of which I advised you some time since. This makes English and Scotch iron, such of it as remains on hand, very dull in our market. In fact, as there is at present no import of English or Scotch, it looks as if our market would soon be entirely bare of them, something that has not happened in 40 years. There has been no change of late in the price of pig iron, which ranges from \$23 to \$25 per ton, according to quality.

The proprietors of the Fulton Foundry, which was burned out here a short while ago, will remove their plant and their business to Baden, an addition to South San Francisco, which, however, stretches over into the adjoining county of San Mateo. A company is now being formed by Mr. Spiers, one of the partners in the enterprise, for the purpose of constructing an immense shipbuilding establishment on a large block of land fronting the basin. The land has been obtained for a nominal sum, and as the works will be on tidewater, there will be no cost of hauling. There will, therefore, be no heavy annual tax in the shape of interest on capital invested in land. There will, however, be jobbing works in the city, and a steam launch will ply constantly between the two places. This will be one of the great manufacturing institutions of the west. It will aim to compete successfully with Eastern institutions.

Imports by rail for the past two weeks have been 4 cars of wagons, 14 cars of iron, 6 cars of machinery, 8 cars of stoves, 1 car of plates, 4 cars of hardware, 2 cars of beams, 3 cars of pipe, 1 car of springs, 1 car of shovels, 51,768 pounds of zinc, 5432 pounds of copper.

The new 10-inch mill building of the East Lebanon Iron Company, at Lebanon, Pa., was injured by a violent windstorm on the 27th ult.

THE WEEK.

As a shipping port for grain, West Superior claims to be second only to Chicago. She now has six elevators with 9,500,000 bushels capacity, and last year West Superior shipped by lake nearly 20,000,000 bushels.

Owners of boats on the Erie Canal in numerous instances declare that they can make no money, and are going out of the business. The railroads, grain shippers say, handle the business almost as cheaply as the boats, and are more expeditious. The only remedy suggested is deepening the canal to 7 feet, so that larger car goes can be carried without much increase of expenses.

The Reading Railroad will next spring maintain regular ferry service across the North river at the Battery, also across the East river from Brooklyn to Twenty-fourth street. Two new double-decked boats will be built.

The Congressional Committee to investigate the Reading deal commences its sessions in New York September 2. Congressman Coombs is chairman.

A report comes from Canada that a new leader is about to conduct the Liberal campaign there, and will abandon the policy of trade reciprocity with the United States and instead advocate free trade with England, thereby strengthening relations with that country.

The latest combine in the mercantile world is a fur pool with \$10,000,000 capital, in which nearly all the firms in the trade have become interested.

The engineers have ascertained that about one third of the destructive crevasses in Louisiana this year were due to crawfish holes, which weakened the embankment.

The great gun of Bijapur was cast in 1549 at Ahmednagar. It is 28 inches in diameter of bore and weighs over 40 tons, Therefore great guns are not a modern invention.

A report of the soundings to determine the practicability of a telegraph cable between California and the Hawaiian Islands, has been sent to the United States Senate by the Secretary of the Navy, states that the cable is practicable, and that the most favorable route is that between Monterey Bay and Honolulu.

Governor Russell of the American Pulp and Paper Association, at a convention held in Saratoga last week, stated that the value of the output of American mills last year was \$125,000,000. In 1840 it was \$5,000,000, and the selling price is only one-third what it was then.

Canada's credit in Great Britain never stood higher. So says the Deputy Minister of Finance at Ottawa. The second new 3 per cent. Dominion loan was subscribed for three times over.

Competition in the coastwise freighting business in California has sent the rates down to 30 cents per 100 pounds, or about one fourth of the rate charged by the railroads on coarse freight, such as iron products. Altogether there are three lines of shippers which are taking out in the aggregate a large quantity of merchandise. The Pacific Mail line of steamers is said to have followed the reduction. It is said that freight from points as far West as Kansas City destined for California has been first shipped to New York by railroad and thence by way of the Horn to its destination. It is cheaper to send low-

class freight 17,000 miles out of the way than to ship it direct by rail from Kansas City to California.

A hero who deserves the medal of the Humane Society is John Cresswell, severely burned on Wednesday at the Pencoyd Iron Works. He was a deliberate martyr, sacrificing himself for the safety of others. An accident occurred to a ladle containing 30,000 pounds of molten metal. A dozen men were in peril when Cresswell rushed forward and averted the danger, being painfully burned in the effort. That he realized his danger was shown by the precautions he took for his protection.

A claim of \$2,454,476 has been filed at Cincinnati by the receiver of the Fidelity National Bank against the assignee of E. L. Harper, the bankrupt iron manufacturer.

Two new laws limiting the hours of labor in any factory, workshop or establishment where the manufacture of any goods whatever is carried on have become operative this month; one in Massachusetts fixing the legal maximum of 58 hours per week for women and children, and one in New Jersey restricting the hours of labor of these persons to 55 hours per week. The enactment of these laws has been secured by the agitation of the so called labor representatives, and in spite of earnest remonstrances from the manufacturing interests affected. Up to the present time neither law has caused much disturbance. In Massachusetts the manufacturers are conforming to the 58 hours schedule, and in the majority of cases continuing the 60 hours wages scale. In New Jersey they are, with very few exceptions, ignoring the new law, and working without reference to its conditions.

A German official report states that no case has been recorded where a ship rigged with wire rigging has sustained any damage from lightning, except in a few instances where continuous connection had not been made with the hull.

The Knights of Labor, District Assembly 49, denounce in formal resolutions the members of the Judiciary Committee in Congress who received testimony concerning the troubles in Homestead, charging them with "discrimination against the workingmen of the United States," and stigmatizing both of the ruling parties in this country with being "lackeys of the capitalistic class." The Knights easily take offense.

The foundering at sea of the Argentine torpedo gunboat Rosales was due to structural weakness, developed during a storm.

The official report of the Dominion just issued gives the revenue for the fiscal year which ended June 30 last as \$35,902,028 and expenditure \$31,267,221, leaving a surplus of \$4,634,807, and this despite the remission of sugar duties. Last year the revenue up to same date was \$37,689,130 and expenditure \$30,909,170, leaving a surplus of \$6,779,960.

Reports from British officers in China indicate that opium culture in that country is rapidly extending. The production already exceeds 330,000 pounds annually, supplying four-fifths of the entire consumption. The Indian trade with China in this article is believed to be doomed.

A disappointed colony in Oklahoma are about to locate on a coffee plantation in Central America.

Chairman P. J. McDonnell, in his official call for the fourteenth annual Labor Congress of the New Jersey Federation of Trades and Labor Unions, to be

held at Trenton, beginning August 15, says business of vital importance to the labor movement in the State will be submitted. Among the objects of the Federation are the encouragement and formation of local trade and wage labor unions and the closer federation of such societies through the organization of central trade and labor unions in every city, and the further combination of such bodies in the State federation of trade and labor unions. So far as can be judged from the published reports of proceedings on the part of the Labor Congress held in Pittsburgh during the past week, the same objects were in view, viz., to devise some plan of forming an international organization. Delegates present represented miners, iron, steel and glass workers, printers, and all the leading trades. The meeting, it is so stated, was the outgrowth of the convention of Socialists held in Brussels, Belgium, a short time ago, but the Socialists were promptly silenced and their professions condemned. That the meeting in Pittsburgh occurred simultaneously with the troubles in Homestead was declared by members to be only a coincidence.

The steamship La Touraine, sailing under the banner of the Compagnie Générale Transatlantique, is another record breaker. She arrived at this port on Saturday, after completing a run across the Atlantic in 6 days, 17 hours and 30 minutes, actual time, from Havre, France, and 6 days, 12 hours and 30 minutes, apparent time. During the first 24 hours La Touraine's log showed that she made the remarkable run of 528 miles.

The president of a cotton factory in Augusta, Ga., makes a most gratifying exhibit to the stockholders, showing a net profit on the year's business of 9 per cent., despite the reported depression in that line.

American exports of manufactured cotton last year were increased in quantity in consequence of an improved demand in South America; the exports meanwhile to China have decreased. Notwithstanding this increase of trade the valuation has fallen off, the figures being \$11,150,023, the average value per yard having been 6.07 cents, against 6.79 cents in the preceding year. Exports from Great Britain to China also suffered a decline.

Great Falls, Mont., promises to develop into the milling city of the West, on account of its superb water power, and its smelting works are becoming important.

Mobile is gradually building up a large trade with Tampico.

The steam launch Beatrice, designed and built to order for Robert Goelet of this city, has been launched from the works of Charles L. Seabury & Co., at Nyack-on-Hudson, N. Y. Her dimensions are: Length over all 55 feet, beam 9 feet, depth amidship 4 feet 6 inches, full draft of water 3 feet 6 inches. The hull is built of selected white oak, frames and keel, with sister keelsons. The timbers are straight grained oak, steam bent, with oak deck timbers and floor timbers. The garboard strake and planking above garboard is selected white cedar, copper fastened and riveted to the frames and timbers throughout. She is fitted with an air-tight compartment forward, and watertight bulkheads fore and aft of the engine room. The engine is a 75 horse power, triple expansion, Seabury design, and steam is supplied by a Seabury patent safety water tube boiler, allowed a working steam pressure of 250 pounds. The average speed of the Beatrice is 12½ miles per hour, but she can make about 14 miles per hour when driving.

The Iron Age

New York, Thursday, August 4, 1892.

DAVID WILLIAMS, - - - PUBLISHER AND PROPRIETOR.
CHAS. KIRCHHOFF, - - - EDITOR.
GEO. W. COPE, - - - ASSOCIATE EDITOR, CHICAGO.
RICHARD R. WILLIAMS, - - - HARDWARE EDITOR.
JOHN S. KING, - - - BUSINESS MANAGER.

The Leveling of Wages.

The more closely one inquires into the wages controversy now in progress in the West, the more he will be convinced that stronger influences are at work than for very many years. To the casual observer, a contest over wages is merely a question of a trial of strength between opposing forces—the employers being always anxious to force wages to the lowest point possible, while the employees are persistently endeavoring to raise their earnings to the highest point that their special occupation will bear. There have been times when this might have been the case. At present, however, the condition of affairs is radically different. Natural forces are at work which are beyond any mere personal feeling of employers. An economic revolution has been steadily progressing in the iron trade of this country, and it is now being felt in every direction, although capital was the first to experience its force. Labor cannot evade the issue, much as it may struggle to do so.

The Homestead difficulty is but an incident of the great movement in progress, and, while it has to some extent been pivotal, the movement would have nevertheless gone on even without any difficulty at that establishment.

Through the enormous expansion of our producing capacity the iron and steel industry of this country is no longer the highly profitable business which it once was. The most extravagant demands of our people for nearly every kind of iron and steel product can easily be met by the establishments now in existence. The times have probably passed forever in which iron and steel manufacturers strained every muscle to keep up with the demand for their products and could afford to pay their employees the highest wages ever paid on the face of the earth for similar service. For years and years, with merely an occasional pause for breath, the country has gone on in its rapid race of development, consuming more and more iron and steel, causing iron and steel works to expand in numbers and in size, and increasing continually the force employed in making iron and steel. But a point has now been reached, and the fact has been plainly apparent for the past two years, when the necessity for further expansion no longer exists, and the requirements of the country can easily be met for perhaps several years to come. Prices of iron and steel are therefore falling to a lower level, having nothing to sustain them beyond what makers may consider a

reasonable profit on their investment. If they can figure out such a profit they will run their works. If they cannot they will shut down. This is the natural condition of a business, and comports with the condition of the more common and less complicated branches of trade. It is not Utopian, and it is very unsatisfactory to those who are looking for large profits, but it is perhaps much better for trade in general than the artificial condition of values which has so frequently ruled in the American iron trade.

With the disappearance of artificial values, an artificial standard of wages also falls. There is no special reason why an iron worker should get treble or quadruple the wages earned in other branches of mechanical industry, perhaps requiring much greater mechanical skill and longer preliminary training. With the manufacture of iron and steel running on the same basis of profit as the other lines of trade, the men employed can hardly hope to maintain the wide discrepancy which has so long existed between their wages and those paid to other workingmen. The revolution has come to the manufacturers and is now simply extending itself to those whom they employ. The more gradually it takes place the better it will be for everybody concerned, but the longer it is postponed the greater will be the drop which now seems to be inevitable.

The Canadian Imbroglio.

Thus far the menace of retaliation against Canada provokes few expressions of resentment from the other side. As a rule, people in the Dominion were prone to regard the so-called aggressive movements in Washington as having little significance, except as specimens of tactics adopted with reference to the pending Presidential campaign. Many reason that patience to endure is the chief requisite on their part, until the political exigency calling for seemingly hostile demonstrations has passed away, being in its nature temporary. At last, however, Canadians see that commerce is endangered by retaliatory measures and apprehension is excited. The Montreal *Gazette* discourses on the latest phase of events as follows:

The remark is sometimes made that when the canal on the Canadian side of the Sault is completed we will be able, metaphorically, to snap our fingers at the United States. It is to be feared this anticipation cannot be realized, for if the Americans are determined to strike at Canada and to damage her commerce in *every possible way* a means will readily enough be found to inflict injury. If not at the Sault, if not at the lake marine, then at the railroads whose traffic is largely derived from the United States, to the advantage of many sections of that country. True, in a war of commercial reprisals the loss would by no means be all on one side. American interests in New England and the Northwest would seriously suffer if the interstate traffic over the Canadian railways was suspended, while our own ocean ports would derive benefits from a course of policy which gave to them the whole foreign commerce of Canada. But contingencies of this kind are not pleasant to contemplate, nor to be encouraged by word or deed. The earnest desire of Canadians is to live in peace and amity with their neighbors, pro-

moting the commercial relations between the two to the utmost extent consistent with our political integrity and material advantage. By a policy of non-intercourse both countries will be made to suffer until such time as wiser counsels prevail, and no sensible citizen on either side of the border can contemplate with indifference the present trend of legislation in Congress.

In the foregoing we have ample protestations of good will and professions of a desire to live peaceably with neighbors. And in regard to the latest provocation of which the authorities at Washington complain, the ministerial organ above quoted says "no effort should be spared" to adjust the difficulty, even to the extent of abolishing canal tolls altogether, if the alleged discrimination against the United States cannot otherwise be rectified. Surely there is not much ground for hostile relations, if these amicable professions truly indicate the animus and intent of the governing power at Ottawa. And on the part of the United States, it is hardly possible that alleged grievances constantly coming into view are only the cover of ulterior purposes and therefore beyond a remedy by friendly concessions.

The Great Consolidations.

Public interest has been attracted to the subject of the consolidation of iron and steel works by recent occurrences. We have thus been led to look up this matter and form a list of the most important among the consolidations effected in recent years. Taken in geographical order, beginning with the East, the list is as follows:

The Benjamin Atha & Illingworth Company, Newark, N. J. This company was formed by a fusion of the interests of Benjamin Atha & Co. and John Illingworth & Co., prominent manufacturers of crucible tool steel and special open-hearth steel.

The Lackawanna Iron & Steel Company, Scranton, Pa. This organization was formed by a union of the properties of the Lackawanna Iron & Coal Company, and the Scranton Steel Company, both manufacturers of steel rails.

The Carnegie Steel Company, Limited, Pittsburgh, Pa. This union of the Carnegie interests under one name is regarded as a consolidation, but it differs from consolidations as they are usually effected, because these interests have not been in competition with one another. The establishments united are the Edgar Thomson Steel Works, making rails; the Duquesne Steel Works, making billets; the Homestead Steel Works, making armor plate, boiler and tank plate and structural shapes; the Upper Union Mills, making bridge material and structural shapes; the Lower Union Mills, making railroad specialties; the Beaver Falls Works, making wire rods, wire and wire nails, and the Keystone Bridge Company, building bridges.

The Wheeling Steel Company of Wheeling, W. Va. This corporation is a union of the Belmont Nail Company, Benwood Iron Works, Wheeling Iron & Nail Company and Wheeling Steel Works. The

last-named concern, however, was built and owned by the first three. Their product has hitherto mainly been cut nails, made from slabs furnished by the steel works, but they are now entering upon other lines of trade.

Union Iron & Steel Company, Youngstown, Ohio. This company has developed into a large corporation by progressive steps. The rolling mills owned and operated are the Girard, Warren, Youngstown, Cartwright and Pomeroy. Their output is principally bar iron and hoops or band iron.

The Tennessee Coal, Iron & Railroad Company, Nashville, Tenn. This is the most important iron corporation in the South, and the greatest exclusively pig-iron producing concern in the world. Including the DeBardeleben Coal & Iron Company's seven furnaces and the Woodward Iron Company's two furnaces, this combination of blast-furnace interests owns 19 furnaces in all—4 in Tennessee and 15 in Alabama.

The Southern Iron Company, Nashville, Tenn. This is mainly a combination of charcoal blast furnace interests in West Tennessee. The corporation also own the rolling mill at Chattanooga, formerly operated by the Roane Iron Company.

The Illinois Steel Company, Chicago, Ill. This corporation was formed by the union of the properties of the North Chicago Rolling Mill Company, the Union Steel Company and the Joliet Steel Company, all manufacturers of rails. At the time of the consolidation, however, the North Chicago Rolling Mill Company also made large quantities of bar iron and structural shapes, while the Joliet Steel Company made wire rods as well as rails.

These are all the consolidations of importance which have recently occurred. We might refer to the absorption by the Cambria Iron Company of the Gautier Steel Company, and the organization in Ohio of the Columbus & Hocking Coal & Iron Company and the Ohio & Western Coal & Iron Company, but they occurred a number of years back and hardly form part of the recent movement. The list thus given, although it seems quite large, embraces but a small part of the total producing capacity of the country. A great many more consolidations would have to be effected before the iron and steel trades could be effectually controlled, which seems to be the fear of a great many people both in the trade and out of it. The labor leaders, we observe, also allude to these consolidations with alarm, as though they feared an onslaught was contemplated on their ranks by the capital thus combined. We venture the assertion that the labor question was not given a thought in the organization of any one of these consolidations.

A pretty fair example of the absurd demands made by the so-called leaders of the workmen is the following paragraph which concludes a rambling "statement" made to the New York press by Thomas J. Crawford, who signs himself "Chair-

man *pro tem.*, Advisory Board, Amalgamated Association:"

"To conclude, our ultimatum at the beginning of a new month is this: We want the retirement of Mr. Frick as chairman of the association, the recognition of the Amalgamated Association, and our scale to expire as it does now on June 1."

The next step we presume will be to overhaul the stock ledgers of a corporation and cancel the certificate of every one who has ceased to be "*persona grata*."

One of the Uncollapsed Booms.

The wild scramble for booming all sorts of towns has pretty thoroughly run its course. It was rampant from 1887 to 1890, and drew into a vortex of real estate speculation thousands of investors who have had ample opportunity since to regret their enthusiasm. Wrecks of such schemes are to be found all over the country. The natural gas districts of Ohio and Indiana were particularly susceptible to such influences. The cheap fuel formed a most favorable basis for the operations of the boomer. Among the towns which then sprung into industrial prominence was Findlay, Ohio. A representative of *The Iron Age* visited that town in 1887, when its boom was "on" in all its majestic might. Speculation was at fever heat. Gas wells were being struck every few days in fresh localities. Manufacturers were removing their works thither from less favored districts, and regarded themselves as most fortunate in getting settled in the town before all the real estate was held at corner lot prices. There was every indication of a prosperous future for Findlay if the boom did not collapse.

The past week the same representative had occasion to visit Findlay. We found no crowds in the hotels discussing natural gas, its advantage and dangers, its probable duration, theories of its origin, &c., no tents crowded with real estate speculators, and no sign of the "boomer" anywhere visible. And yet the boom had not collapsed. Among the few places which have been able to survive the mad rush of real estate speculators, and recover from the efforts of the too-enthusiastic friends, Findlay stands quite conspicuous. It has grown steadily in population, increased its number of manufacturing establishments, erected substantial business blocks, paved its principal streets, and now carries itself proudly along as one of the well established manufacturing cities of Ohio, with a well-earned right to be considered the equal of any in enterprise and public spirit. Its gas wells no longer develop 400 to 500 pounds pressure to the square inch, but they run along very steadily at 100 to 200 pounds and the gas supply seems far from being exhausted. It is, in fact, so well husbanded and its waste is so thoroughly guarded against, that the manufacturers regard the Findlay field as a permanent field.

The people of the city are still interesting themselves in inducing manufacturing

establishments to move in from other localities, but they do not offer bonuses indiscriminately. The concern which passes muster at Findlay and secures the inducements held out there must be gilt-edged in every respect. This is one of the best evidences of the solidity of the business interests of the place. Our compliments to Findlay and its uncollapsed boom.

The Efficiency of the Naval Ram.

In future naval battles the gunless steel ram seems destined to play an active part. The destructiveness of the iron prow has been demonstrated either by accident or design in at least a dozen instances, and if war ships are built expressly to give efficacy to this arm of defense, there is no reason why vessels of this character, like the modern torpedo, should not henceforth be recognized as an important naval auxiliary, particularly as the cost of construction and maintenance is comparatively small. Good naval authority has suggested that in case of hostilities with a foreign country, a small fleet of swift-sailing rams would constitute an efficient coast patrol. The ram now approaching completion at the Bath Iron Works, in Maine, is understood to have been built in conformity to plans submitted by Admiral Ammen, and as she will constitute the first addition of this kind to the American navy she will be regarded in some sense as the pioneer in a new line of naval construction. A naval officer who has seen active service, in a contribution to one of our prominent periodicals, says in reference to preparations for coast defense that "the best, surest, and most deadly instrument that we can use or rely upon in a sudden emergency must be the naval ram," and in support of this view he quotes Sir George Eliot, in his "Treatise on Future Naval Battles," as saying that a chance of winning a battle by ramming will be an object in future naval contests, also that "rams and not guns" will be a main reliance for success. In constructing vessels for ramming purposes, it necessarily follows that they must possess high speed to qualify them for successful maneuvers, particularly in the choice of position, that they should present the smallest possible surface to invite the attack of the enemy, and draw not to exceed 9 feet to permit service in shallow water. In short, the low-lying, high-powered turtle back appears to be the ideal cherished by some of our naval officers of known intelligence and wide experience, and as all armament is dispensed with, the special type of craft here referred to appears to be little more than a huge projectile or modernized Roman catapult, the distinguishing difference, aside from mechanical details, being that one contrivance was for operations on land, to demolish walls of stone, while the other is a nautical device, to penetrate floating walls of steel plate. The impact being the force relied upon in either case, the assailing body must be sufficiently ponderous to render the blow effective and at

the same time be fortified internally to withstand the shock of collision. The crew employed, for aught that appears to the contrary, must be prepared for a like contingency.

The Agitation for Good Roads.

The increasing interest displayed in the improvement of country roads is highly gratifying. The Western States are moving with vigor in awakening public opinion on the subject. Iowa will hold a State convention on August 16, at Des Moines, for the single purpose of discussing the improvement of public roads. It is expected that the way will be opened for practical legislation on the subject. The farmers and the bicycle contingent are thoroughly roused to the importance of improving the highways of the whole country, and the movement now in progress seems destined to have a wholesome effect.

In connection with the improvement of roads an agitation has developed in favor of broad-tired wheels for draft vehicles, in order to preserve the roads in good condition after they have been improved. It is seen very plainly that the narrow-tired wheels now so universally used are destructive to roads and should be supplanted by broad tires. Some of the officials of leading Western cities are also outspoken in favor of municipal regulations enforcing the use of broad tires on heavy vehicles. It is to be hoped that the agitation now going on will not be permitted to cease until all danger of the annual "mud blockade" in the rural districts shall have been overcome.

The Tactics of the Coal Combine.

Ineffectual efforts—perhaps feints, they should be called—have been made and continue to be made in various quarters to break the coal combine, but the legal counsel employed for the defense appear to be too strongly entrenched and too wily to permit a derangement of the original purpose to control the trade. For these or some other reasons all assaults upon the alleged illegal combination are successfully parried to the extent that the policy marked out for the production and sale of the output is adhered to without interruption or hindrance. The price of coal is advanced from time to time in a sort of arithmetical progression with the apparent, if not openly avowed, design of reaching a certain definite maximum—say \$5 a ton for stove—"before the snow flies." Then it is claimed business will be established on a basis normal and therefore fairly remunerative. Transactions at the announced advance are temporarily arrested, so that the stagnation prevailing is spoken of as without precedent; but the parties chiefly interested cherish a belief that no break is likely to occur until consumers are compelled by necessity to recognize the power that essentially controls the market and provide for themselves at the price demanded. The diffi-

culty encountered thus far in carrying the scheme into effect is the abundance of coal afloat "bought at June prices," which somehow seems to be inexhaustible in supply. Like the widow's cruse, no matter how many cargoes are sold there seems to be plenty more left of the same sort. The combination would have it understood that stability can be maintained until in due course of nature the demand for fuel will become peremptory. Lack of confidence in the ability of the managers to carry out this programme appears to be the reason for the holding off of consumers. It is estimated that probably not more than half of the allotment of 3,000,000 tons for August will be taken by individual coal consumers, leaving it to be inferred that the coal market is by no means in the roseate condition usually depicted and that shrewd management alone prevents a serious miscarriage of the entire scheme for bolstering the trade.

One point in connection with the proposal to arbitrate the differences between the iron manufacturers and the Amalgamated Association, under the provisions of the Wallace Voluntary Trade Tribunal act, should not be lost sight of. The section touching the umpire's decision upon questions of wages reads: "It shall in no case be binding upon either employer or workmen, save as they may acquiesce or agree therein after the award." Past experience has taught that if a rejection of a decision is made, it generally comes from the men, who, in some notable instances, have actually repudiated their own authorized representatives. The record of the Amalgamated Association has been distinctly one of hostility to arbitration, and it is very doubtful now whether the lodges will vote in favor of that mode of settlement. How largely their action will be influenced by the failure of the Homestead strike remains to be seen. On the other hand, it seems quite likely that some of the leading Pittsburgh mills, competitors of the Carnegie Steel Company, may decide to follow in their footsteps and declare their works non-union. In the present condition of the iron and steel trades, they have a good deal to gain and very little to lose. The old days of anxiety over holding customers are pretty well over. With a well-established reputation, the majority of manufacturers need look only to making concessions of \$1 or \$2 per ton under prevailing prices to capture what business they urgently need. We expect other concerns besides the Carnegie Steel Company to be added to the growing list of non-union mills, whatever may be the outcome of the present proposal to arbitrate.

W. W. Lindsay, who has been for some time manager of the Western branch of the Philadelphia Engineering Company of Philadelphia, with headquarters at Chicago, has this month taken over the general management of the Barr Pumping Engine Company of Philadelphia. Mr. Lindsay, however, still retains his interest in the former company.

CORRESPONDENCE.

Carnegie.

To the Editor: The labor trouble at Homestead has for the last four weeks engrossed the minds of all those who are interested in manufacture or in any way connected with labor.

Politicians have tried to make capital out of it. Congress appointed a committee to investigate the trouble, and even our dignified senators took a hand in trying to solve the problem, and in that Chamber could be heard the voice of one whose heart bled for the working man, and with tears in his eyes and eloquence backed up with heartfelt sympathy and political pan he startled the country by endorsing the Bellamy theory—that is, if a man is once employed by a corporation in any kind of employment, the position becomes his own and no other man has a right to take it from him, no matter if he could do it better and cheaper. By this wonderful display of good common sense on the question, our Senator from Illinois is entitled to an appendage to his already illustrious name, and why not? Gladstone is called the G. O. M., and why not add to our Illinois Senator's name G. O. F.? While sympathy has been expressed for all of the workingmen, coming from all directions, nothing but abuse is showered upon all the leading officials of the Carnegie institution in general and Andrew Carnegie in particular, and protection is ridiculed.

To be brief, so far as the workingmen are concerned, who were the means of creating this dispute, we might safely say that not one of the 300 workmen directly concerned are asked to work for starvation wages. On the contrary, the investigating committee sent by Congress were surprised at the amount of wages being paid to the steel workers. As usual in all strikes, it will be the poor laboring man, who is working for \$1.50 a day, who is the one who suffers the most. Still the writer does not advocate low wages. The higher the wages the more money is spent and more money put into circulation.

Wages should be the last thing to be touched in reducing the cost of manufacture, but the competition in the manufacture of Bessemer steel in particular has become so keen, and the supply is so far in excess of the demand, that the price of soft steel was lower during the first six months of this year than it was ever known to be before in this country, and this is what caused the trouble. Three years ago 4-inch steel billets were sold in Pittsburgh at \$28 per ton, and within the last six months 4-inch billets were sold lower than \$22 per ton. It is evident to all fair-minded men that labor should at least bear part of this shrinkage in value, and we notice that the laboring men who receive, say from \$1.50 to \$2 per day are not reduced, and the vast majority of working men are men whose wages range as above.

But I will not discuss this subject. I wish here to speak of some of the remarkable comments of some of the press in this country, especially in reference to the criticism of Andrew Carnegie. He is accused of being guilty of becoming worth \$40,000,000. Let us see how he made this money. Was it in Wall street, or on the board of trade, where some men make or lose fortunes in a month or a year, buying from others what they did not own, and selling what they never possessed, where the product of the mine, and the brains and muscle of men are not used. No! Carnegie made his money in the manufacture of iron and steel, employing thousands of workmen, and to-day he is at the head of an institution which employs more men than any other in this country.

Where did he start life? As an office boy, son of a poor widow, who worked

his way up the ladder of success and fame, until to-day he stands so high as to become a shining mark for the abuse of all his less successful rivals, men who had far greater opportunities than he had, but through lack of ability failed. In their endeavor to win the working men's vote the newspapers are abusing him in such a manner as to border on billingsgate. In this they are backed up by the press in Great Britain. One paper, the *Chicago Herald*, in an editorial of the issue of Saturday, July 16, 1892, said: "Protection does indeed protect. It protects Carnegie."

I would like to ask the *Herald* if protection did not protect the Union Coal, Iron & Transportation Company, which was started in Joliet over 22 years ago and failed? Did not protection protect the Joliet Iron & Steel Company, Joliet, Ill.? Did not protection protect the Union Iron & Steel Company of Chicago? Did not protection protect the Vulcan Steel Company of St. Louis, Mo.? Did not protection protect the Freedom Iron & Steel Company of Freedom, Pa., and many other iron and steel works that have failed during the last 20 years? Did not protection protect the various iron and steel companies who have failed, right in Pittsburgh, or are we to believe that protection was a law or measure passed expressly for the benefit of Carnegie. One would believe so from what the *Herald* says. Again, the very works, Homestead, where the dispute is at present, was started and owned by parties who had little if any success and were glad to get rid of the plant by selling it to Carnegie. The same can be said of the Duquesne Steel Works. These two works which at one time did not cut any figure in the steel trade, to day, after being in the hands of the Carnegie management for a few years fix or control the price on billets and structural steel and make armor plate for the United States Government equal to any made in the world. Carnegie has done as much if not more than any other manufacturer of Bessemer steel to reduce the cost to the consumer of soft Bessemer steel, rails, plates, structural material (in the shape of angles, beams, girders, &c.), in the lavish and wise manner he has spent his money in improvements, so that he has kept the lead in the intense competition in the manufacture of steel in this country, especially during the last ten years. He has been a benefit to his fellow-men in finding them employment, and to the country in general in giving cheap material, yet he is the subject of abuse on all sides.

There is less poverty and hardship among the employees of the Carnegie organization than there is in any other manufacturing establishment in the world. Carnegie has done more to try and elevate his workmen than the majority of employers. He is a king among men as an organizer. This is the secret of his success, not that protection protects Carnegie any more than it protects the humblest citizen in the United States.

FAIR PLAY.

The Wire Gauge.

To the Editor: Apropos of the wire-gauge discussion running in the columns of *The Iron Age* for several weeks, I thought that, as the interests of electrical engineering had been referred to, your readers who are interested in this particular subject might wish to know just what decimal scale, with numbers expressing diameters in thousandths of an inch, would meet the particular requirements of electricians. I can do no better than quote a decimal gauge given in "Herring's Uni-

versal Wiring Computer," pages 30 and 31:

0.500	0.250	0.100	0.030	0.014	0.005
0.450	0.225	0.090	0.028	0.013	0.004
0.425	0.200	0.080	0.026	0.012	0.003
0.400	0.180	0.070	0.024	0.011	0.002
0.375	0.160	0.060	0.022	0.010	0.001
0.350	0.140	0.050	0.020	0.009	
0.325	0.130	0.045	0.018	0.008	
0.300	0.120	0.040	0.016	0.007	
0.275	0.110	0.035	0.015	0.006	

The above offers a wide range, and ought, it would seem, to meet the requirements of all the metal industries.

Yours very truly,

WALTER S. DIX.
NEW YORK, August 2, 1892.

OBITUARY.

ALBERT BISBEE.

Albert Bisbee, one of the oldest residents of Chelsea, Mass., died July 27. He was born in Bridgewater in 1804, and came to Boston and learned the ironworking business, beginning the manufacture of fire engines. In 1836 he moved to Chelsea and started an iron foundry, having as partner James Endicott, the firm being one of the oldest and best known in that business in New England.

PETER R. STOY.

Peter R. Stoy, vice-president, treasurer and general manager of the Ohio Falls Iron Works of New Albany, Ind., died, July 19, at his home in New Albany. He was 67 years of age and spent all of his life in that city, and in all of the developments of Southern Indiana he was one of the foremost pioneers. In 1848 he founded the hardware business which is to day known as P. R. Stoy & Sons of New Albany. In 1873 he became interested in the Ohio Falls Iron Works, and it was through his experience in the iron business that the rolling mill came through the panic of that year successfully. The mill has seldom been closed down, except for temporary matters, and never suffered from a strike. The other directors of the company seldom had occasion to demur from his line of management, all recognizing his eminent fitness to be at the head of the enterprise. Such men as the late W. C. De Pauw, the plate glass manufacturer, and many other contemporaries sought his counsels in business ventures, and few men who were connected with him felt otherwise than honored in the association. W. C. De Pauw during his life was principal owner and president of the rolling mill, and since his death, his son, Newland T. De Pauw is president and P. R. Stoy was vice-president and treasurer. Two of Mr. Stoy's sons are now connected with the mill, and the management of this successful works will probably remain in the Stoy family for another generation. Chas. W. De Pauw and John McCullock are the other surviving directors.

Wilkie, Bothwell & Co., Limited.

The above firm have just been organized in Pittsburgh, with headquarters in Room 606, Times Building, in that city. The new concern have issued an announcement to the trade that having had 15 years' experience in blast furnace and steel works construction, they are prepared to furnish designs for the erection of blast furnaces and steel plants, and will contract to remodel old plants to conform to the most modern construction. They will also make a specialty of furnishing valves and fittings for Whitwell and Cowper Kennedy hot-blast stoves. The members of the firm are Jno. R. Bothwell, A. M. Wilkie and Geo. R. Bothwell, the last named being secretary of the firm.

Southern Pig Iron Rates.

A new tariff on pig iron has been issued by the Louisville & Nashville Railroad Company, giving rates from Southern furnaces to points North and West. The rates between some of the more important points are given below, in carload lots of not less than 17½ tons of 2268 pounds:

To	From	Chattanooga, Tenn.	Birmingham Dist., Ala.	Sheffield Dist., Ala.
Addystown, Ohio.....		\$2.25	\$2.75	\$2.50
Albany, N. Y.....		5.63	5.88	5.63
Allegheny, Pa.....		3.90	4.40	4.15
Bellaire, Ohio.....		3.90	4.40	4.15
Buffalo N. Y.....		3.90	4.40	4.15
Chicago, Ill.....		3.60	3.85	3.60
Cincinnati, Ohio.....		2.25	2.75	2.50
Cleveland, Ohio.....		3.35	3.95	3.60
Columbus, Ohio.....		2.85	3.35	3.10
Demmler, Pa.....		3.90	4.40	4.15
Denver, Col.....		8.53	8.53	8.00
Des Moines, Iowa.....		5.53	5.78	5.33
Detroit, Mich.....		3.60	3.85	3.60
Duluth, Minn.....		5.14	5.39	5.14
East St. Louis, Ill.....		3.00	3.25	2.80
Hamilton, Ohio.....		2.50	3.00	2.75
Hamilton, Ont.....		4.10	4.60	4.35
Johnstown, Pa.....		4.20	4.70	4.45
Kansas City, Mo.....		5.00	5.00	4.50
Mansfield, Ohio.....		3.15	3.65	3.40
Milwaukee, Wis. (all rail).....		4.00	4.25	4.00
Milwaukee, Wis. (all water).....		3.60	3.85	3.60
Minneapolis, Minn.....		5.14	5.39	5.14
Montreal, P. Q.....		5.65	6.15	5.90
New Castle, Pa.....		3.45	3.95	3.70
Ottawa, Ont.....		5.65	6.15	5.90
Pittsburgh, Pa.....		3.90	4.40	4.15
Rochester, N. Y.....		4.40	4.90	4.65
Salem, Ohio.....		3.45	3.95	3.70
Springfield, Ohio.....		2.70	3.20	2.95
Springfield, Ill.....		3.50	3.75	3.50
St. Joseph, Mo.....		5.00	5.00	4.55
St. Louis, Mo.....		3.00	3.25	2.80
St. Paul, Minn.....		5.14	5.39	5.14
Steubenville, Ohio.....		3.90	4.40	4.15
Terre Haute, Ind.....		2.75	3.00	2.75
Topeka, Kan.....		6.59	6.59	6.14
Toronto, Ont.....		4.10	4.60	4.35
West Superior, Wis.....		5.14	5.39	5.14
Wheeling, W. Va.....		3.90	4.40	4.15
Youngstown, Ohio.....		3.45	3.95	3.70
Zanesville, Ohio.....		3.25	3.75	3.50

The Schenectady Locomotive Works of Schenectady, N. Y., form a good illustration of the growth of locomotive building in this country, and also of the changes which have taken place in shop construction since the establishment of the works in 1848. The advance in shop architecture during recent years is well illustrated by the types of the buildings which have been successively added as the growth of the industry required. The latest addition is that of the new foundry, which is now nearly completed. This building will be well equipped in all particulars, including the Sturtevant system of heating and a 15 ton Sellers traveling crane. The erecting shop, built about a year ago, is similarly equipped with heating apparatus and is provided with a 40-ton Sellers traveling crane of 65 feet span. On the completion of the new foundry the present foundry will be converted into a cylinder shop. All of the machine tools which are used in boring and finishing cylinders and which are now in the machine shop will be moved and arranged with suitable cranes for the rapid handling of the work. At present the machine shop is very much crowded. The present capacity of the works is 400 locomotives per year, which will be increased to 450 when the new foundry and cylinder shops are finished. The Schenectady works, it will be remembered, were pioneers in building compound locomotives. In these engines the piston rods are extended through the front heads, and three grooves, which are turned in the bearing surface of the pistons, are filled with Magnolia metal. The works are engaged on 26 two-cylinder compounds. Twenty of these compounds are 12 whee-

engines for the Southern Pacific company, having cylinders 20 and 29 x 26-inch stroke. One of the heaviest two-cylinder compounds up to the present time is ten-wheel engine for the C. & N. W. Ry., having 68-inch drivers and cylinders 20 and 30 x 24-inch stroke. In the boiler shop a boiler is building, intended for 190 pounds pressure, made of $\frac{1}{2}$ -inch plates, and having the top and sides of the fire box in one plate. The longitudinal seams of this boiler are made with double butt straps, double riveted, and having the inner covering strip wide enough to include a third row of rivets in each sheet. This shop is provided with a 15-ton Morgan traveling crane, the square shaft for which was welded in place. The drafting room, which is over the general offices and is conveniently arranged, is the center from which all work emanates, including orders for material. The drawings for shop use are, in general, ink drawings on heavy white cards, which are filed in the drafting room, when not in use. The Schenectady works are conveniently located upon the tracks of the New York Central and Delaware & Hudson Canal companies' railroads. There is a long spur siding along the eastern side of the yard, which is used as a testing track for new engines, which are fired up in the erecting shop and run out under their own steam.

Building Trades' Troubles in New York.

Estimates are made at the Labor Union headquarters in this city that 15,000 men are now out in the different building trades, and the fight against the iron workers and manufacturers who resist their demands seems no nearer a settlement than it was a week ago, although the bosses say that they are replacing the strikers with non-union men. The fact that the latter have been assaulted on their way home from work and that one man has been wounded by a shot, may compel the interference of the Courts and a resort to more decided measures for the preservation of the peace.

An authority in the building trade said respecting the origin of the trouble: "The troubles between the Cornell people, or more properly speaking, the Iron League, which is made up of all the architectural iron manufacturers in this vicinity and the Housesmiths' Union are of so involved a nature and of so remote an origin that it is extremely doubtful whether either side is clear as to what it is really fighting for. This, of course, makes no difference whatever. The fight goes on. Building is interrupted, men are idle, and both sides are determined to win no matter what the cost. It seems that the trouble began in this manner: The Jackson Architectural Works' managers had in their employ at one time a hoisting engineer who, it is claimed, violated certain rules of the union to which he at that time belonged. He was fined \$50 for his offense, but refused to pay the fine, claiming that the charges against him were false. The union decided to expel him. Then the union demanded his discharge by the Jackson people. The Jacksons said they would not discharge the man, and they put him to work on the new Criminal Court building. Thereupon all the housesmiths and carpenters employed on the building went out on strike. The Housesmiths' Union did everything in its power to harass the Jackson people, and so interfered with their business that at last the Iron League took a hand in the fight, and locked out all the union housesmiths in its employ. The union retaliated by declaring a boycott on the Cornell Works, because S. M. Cornell was president of the League. For six weeks there was a great deal of talk on both sides, but nothing definite was done. A few days ago, however, the Public

Cartmen's Union refused to cart any materials to buildings on which the products of the factories of the Iron League were to be used." This has resulted in a counter action on the part of contractors, builders and dealers in building material, through which the entire trade in brick, cement, lime, lath, &c., has become practically suspended, awaiting further developments.

The Homestead Strike.

Matters at the Homestead Steel Works have progressed very smoothly during the past week, and all advantages have been on the side of the firm. The force of men at work has been steadily increased, and while the firm, if they so desired, could have shown a larger number of men at work than there are at present, it has been their policy right through to pick out the best men that present themselves. At this writing over 1000 men are employed at the Homestead Steel Works, and are giving general satisfaction.

On Monday last the following departments of the plant were in operation: In the open-hearth department No. 2, five furnaces were running, and two others which are undergoing repairs will be started up during the present week. The slabbing-mill is running full, and it will probably be put on double turn before this week is out. The 119 inch plate mill is also in operation running single turn; the 23 inch mill was put in operation on Saturday, July 30, and the 33 inch was put in operation on August 2. The armor plate machine shops are both running double turn. From the above information, which was secured from a tour made of the Homestead Steel Works, it will be seen that the efforts of the firm to secure new workmen have been successful beyond expectations, and it is only a matter of a short time until a sufficient force will be available to operate the entire plant. It is not expected that the firm will find it necessary to import in the works the same number of men as were employed before the trouble, for the reason that a break among the strikers by which large numbers of them will return to work is probable at any time. Reliable information received within the past day or two indicates that a great many men are wavering, and many of them will no doubt make application for their old positions during this week, or just as soon as they are assured that they will not imperil their lives by so doing. It is a well-known fact that since a number of the troops have been removed from Homestead the strikers are again assuming an air of bravado, and threats are freely made against the men who have already gone to work.

For some years it has been the custom of the Carnegie Steel Company, Limited, to allow their employees 6 per cent. interest on money deposited with the firm. Any man depositing money with the firm was given to understand that when he left the service of the firm interest on his deposit would cease at once and his money would be returned to him on demand. In connection with this arrangement the following notice was sent out last week to about 800 employees who have quit work since the commencement of the labor troubles at Homestead:

PITTSBURGH, PA., July 27, 1892.

DEAR SIR.—As provided in the agreement covering the special deposit of money made by you with Carnegie, Phipps & Co., Limited, you are hereby notified that, having left the employ of this company, you are no longer entitled to receive interest on said deposit.

Interest ceases at this date, and the principal will be paid you on demand at the general offices, or on one day's written notice sent in from the works.

By order of the Board of Managers,
THE CARNEGIE STEEL COMPANY, LIMITED,
H. C. FRICK, Chairman.

The above notice applies not only to Homestead, but to all men formerly employed in Beaver Falls Mills and the Upper and Lower Union Mills in Pittsburgh. It is stated that the amount of money on deposit with the firm amounts to about \$180,000, some of the workmen having as high as \$2000 so invested.

In addition to the large numbers of informations made by F. T. F. Lovejoy, secretary of the Carnegie Steel Company, Limited, against the Homestead rioters charging them with murder, 36 additional informations were entered last week against Homestead strikers, charging them with aggravated riot. A number of these have been arrested and after furnishing bail in the sum of \$2000 were released from custody.

The Beaver Falls Mills are closed down in every department. As we have before stated, none but the skilled workmen came out on strike in the two Union Mills, and laborers and mechanics continue at work right along. At the Duquesne Steel Works the situation is also unchanged, and that plant is idle in all departments, and will continue so until the firm get ready to put it in operation.

At the general offices of the Carnegie Steel Company, Limited, advices are received twice a day from Mr. Frick's physician, and these have so far indicated that Mr. Frick is getting along as well as could be expected. If the rate at which he has been improving since he was stricken down continues, it is not improbable that he will be able to be out in about two weeks. Cablegrams are received daily from Mr. Carnegie, and he is kept fully informed as to Mr. Frick's condition. It is probable that Mr. Carnegie will return to Pittsburgh during the latter part of September or early in October.

The break in the ranks of the Homestead strikers, which had been expected for several days, came on Monday last, when 23 of the old hands reported for duty in the Homestead Steel Works up to noon. Further breaks among the men on strike are expected at any time, and it is among the probabilities that before the present week is out the strike at the Homestead Steel Works will be practically a thing of the past. On Monday evening of this week there were over 1100 men at work, and this number is being increased at the rate of from 100 to 200 per day. It is now admitted on all sides that the Amalgamated Association have been defeated in their contest with the Carnegie Steel Company, Limited, and it is only a matter of a short time until a sufficient force of men have been secured to operate the entire plant.

(By Telegraph.)

On Wednesday morning there were about 1350 men at work at the Homestead Steel Works, and before evening this number will have been increased to 1500. About 110 of these are old men formerly employed in the works, who have deserted the Amalgamated Association. The rapid manner in which men have been reporting for duty during the past few days has made it necessary for the Carnegie Steel Company, Limited, to hold workmen for a short time until accommodation for them can be made at Homestead. The backbone of the strike is broken, and very badly, that is evident. A mass meeting of the members of the Amalgamated Association was held in Homestead yesterday for the purpose of bracing up the weak-kneed members, of which there are many hundreds just now. Assurances were held out to the men that they would evidently win the fight, and everything that was possible

was done in order to hold the men together. Notwithstanding this, the men are deserting the organization and returning to work almost as fast as positions can be found for them. While representatives of *The Iron Age* were in the Carnegie office this morning five old workmen came in and asked that they be given their old positions. They were sent to Homestead with instructions to report to General Superintendent Potter.

Before the week is out it is expected that 1800, and possibly 2000, men will be at work. A very large number of skilled workmen from Sparrow's Point, Coatesville, Phoenixville, Reading, Pottstown, Chester and other Eastern cities have come to work at Homestead.

At the Upper Union Mill, on Wednesday morning, there were five departments in operation, and it is expected that a sufficient number of men will be secured to operate this plant full time within a week or ten days. As soon as the Upper Union Mill is in full operation the Lower Union Mill will be started up. The old workmen formerly employed at the Duquesne Steel Works have been given until Wednesday evening to make application for their old positions. If a sufficient number signify their intentions of desiring to accept their old positions they will be given the opportunity of going to work. If such is not the case, however, new workmen will be secured and this plant will be put in operation just as soon as a sufficient number of men have been secured to start up. In all probability the Beaver Falls Mills will be allowed to remain idle, as the firm are not making any effort whatever to resume operations there. As is well known, the only products turned out at the Beaver Falls works are Wire Nails and a few surplus Rods which are sold in the open market. For some time previous to the present trouble at the Beaver Falls Mills the firm were considering the advisability of either removing this plant or getting rid of it, and the actions of the men in breaking their contract has probably resulted in the firm deciding to either dismantle the plant or allow all of it to remain idle for an indefinite period. From present indications it is possible that the Beaver Falls Mills will never again be operated by the Carnegie Steel Company, Limited.

Since our report of last week, but two firms have signed the iron scale for 1892-93 as presented by the Amalgamated Association. One of these is the Newport Rolling Mill Company of Newport, Ky., and the other is Brown & Co., Incorporated, proprietors of the Wayne Iron and Steel Works at Pittsburgh. The signature of the last named firm may be considered an important one, as this concern is one of the largest manufacturers of bar iron in the Pittsburgh district. Their plant was erected in 1829, and has been rebuilt and remodeled several times since that time. Their equipment consists of 34 single puddling and 11 heating furnaces, 5 trains of rolls, 5 hammers, one 36-pot and seven 18-pot steel-melting furnaces, and one 45-ton cementing furnace. The product consists

of merchant bar iron, iron boiler plate and rolled and hammered crucible steel. The annual capacity of the plant is 18,000 net tons of iron and 7000 net tons of crucible steel.

Washington News.

(From Our Regular Correspondent.)

WASHINGTON, D. C., August 2, 1892.

The speech of Senator Aldrich of Rhode Island in behalf of protection, and that of Senator Carlisle of Kentucky in support of tariff reform, fairly draw the lines on the attitude of the two great political parties of the country on the dominant economic question, as far as Congressional opinion is concerned. The leaders of both sides in the two Houses had their say when the fragmentary free-trade bills were reported from the Committee on Ways and Means, discussed and passed. The Senate Committee on Finance have reported adversely in lump on the bills sent to them, and the speeches of the two Senators mentioned cover the ground of the majority and minority indirectly on the main issue, although the speeches were actually intended as commentaries upon the report on the investigation as to labor and living and prices of articles before, coincident with and since the passage of the McKinley-Aldrich tariff bill.

The country is now waiting for the formal expression of the views of the candidates of the two parties in their letters of acceptance.

The story that ex-President Cleveland, acting under the advice of his managers and friends, will somewhat tone down his views on tariff reform, has been formally disavowed in one of his recent epistolary communications. Therefore the two parties represented by their distinguished standard bearers will go before the people undisguised by sophistical wordings, and as the exponents in the fullest sense of tariff for Governmental revenue and home industrial protection, and tariff revision or reform for revenue only and for free trade as far as practicable, consistent with the revenue requirements of the Government.

The delay in the candidates putting out their letters of acceptance has caused some inconvenience to the National Committees, as their chairmen are desirous of conducting the documentary distribution in line with their utterances by leading off with these important political papers. The members of both National Committees fully realize the task before them in the way of getting their campaign literature before the people. It is expected in another week this branch of their work will be under full swing.

The Bethlehem armor plate experiments are the topic of much favorable comment among naval experts and considerable correspondence has already been received from foreign naval attachés and home engineers for further information. The Department has not yet received more than the general accounts. Since the superiority of the Bethlehem plates was demonstrated by results at Indian Head some months ago, much improvement has been made in the physical qualities of the Bethlehem plates.

The naval authorities now claim that American armor plates are without a rival in the product of the works of England, France or Germany. There is considerable interest among the attachés of these governments to get at the formula or the methods of treatment of the Bethlehem plates for the information of their own governments. This information is not being divulged, and whether the Bethlehem Company, even as a private corporation, would be willing to let foreign governments have

the benefit of their advanced stage of armor manufacture is a question. It would evidently give great satisfaction to naval officers to have an invitation from English or French manufacturers to send an armor plate over for test under their methods and conditions. The best European-made plates were not in sight in the matter of satisfactory results when the tests were made side by side with our own a year or so ago.

When the Columbia or Pirate, now in her element, receives her coat of mail in the shape of the great armor plates, she will be the terror of all nations and the Ruler of the Waves.

The Wire Scale.

(By Telegraph.)

At a conference held in Pittsburgh yesterday between a number of wire nail manufacturers and a committee from the Amalgamated Association, a scale governing wages for wire drawing for 1892 and 1893 was adopted, a number of changes were made in the old scale, and the manufacturers were granted a reduction by the Amalgamated Association that will average from 8 to 10 per cent. The scale was also rearranged, a number of sizes that were not worked being dropped. In the foot notes Nos. 2 and 4 were stricken out, leaving the foot notes in the new scale as follows: "Any sizes that have to be drawn not mentioned in the above scale the price for drawing same shall be settled satisfactorily before starting on the same. All rods not pointed shall be $\frac{1}{4}$ cent extra on above prices. The company shall furnish not less than four convenient battering stands for wire drawers. The same size gauge shall be adopted that is at present in use at Salem, Findlay, New Castle and Anderson, better known as the Salem Wire Nail Gauge, to govern all wire drawers." The firms represented at the meeting and which will be governed by the scale adopted were the Salem Wire Nail Company, with factories at Salem, Ohio, and Findlay, Ohio, New Castle Wire Nail Company, New Castle, Pa., and the American Wire Nail Company, Anderson, Ind. The Hazen Wire Nail Company of Cincinnati, Ohio, with works at Anderson, Ind., will also be governed by the scale adopted, but this firm does not draw any wire, buying it from the American Wire Nail Company. It was also agreed that should the base price of wire nails advance to \$1.75 per keg, f.o.b. at factory, all concessions made by the men shall be returned.

The Belleville Steel Company, Belleville, Ill., have signed the Amalgamated Association steel scale for their converting and blooming mill.

Theodore Sturges, president of the Oxford Iron Company, treasurer of the Lackawanna Iron and Steel Company and of the New Jersey Zinc and Iron Company, died suddenly in this city Tuesday night. Mr. Sturges, who was 63 years of age, had only recently returned from Europe, having made a brief trip for the sake of his health. He was indisposed at his office on Tuesday noon, but was not regarded as seriously ill, so that his death was a shock to his business associates. He was closely allied with B. G. Clarke in all the business interests of the latter.

MANUFACTURING.

Iron and Steel.

Sharon Furnace of the Sharon Iron Company, Limited, at Sharon, Pa., has been blown out in order that some necessary repairs may be made. At this time it is not known when the furnace will resume blast.

Regarding the trouble with the molders employed at the works of the Sharon Steel Casting Company, manufacturers of open-hearth steel castings at Sharon, Pa., we are advised that the molders formerly in the employ of this firm were discharged for the reason that they failed to give the firm proper service for their day's work. Other molders were employed to take the places thus made vacant, and the department in question as well as all other departments of the plant are now in full operation.

The United States Iron and Tin Plate Mfg. Company of Demmler, Pa., have recently put in operation one large sheet mill and two tin mills. These mills were planned some time ago, and their erection has just been completed. When all departments of this plant are in full operation the above firm will give employment to about 500 men. In the tin house department girls have been put to work, but this is an entirely separate branch from the black plate mills. The employing of girls in the tinning department of tin-plate plants is not a new custom, as it has been in vogue in the old country ever since the tin-plate industry has been in existence. It has also been done before in this country. The above firm advise us that the report that they were building two new puddling furnaces is incorrect, but state that they have recently put in operation two furnaces that have been idle for some time, and in all are now operating five puddling furnaces.

It is reported that nearly all the stock for the proposed new furnace at Harriman, Tenn., has been taken, and that active operations will begin at an early day.

The Sloss Iron and Steel Company, Birmingham, Ala., are relining and repairing their No. 2 furnace. As soon as completed it will resume operations.

Mattie Furnace, formerly known as Girard, operated by the Girard Iron Company, at Girard, Ohio, in one week recently turned out 1421 tons of pig iron. It will be remembered that this furnace was thoroughly overhauled and rebuilt some time since and has only been in operation on the present run about two months.

The Continental Tube Works, at Frankstown, Pittsburgh, owned and operated by the Oil Well Supply Company of that city, have been closed down for an indefinite period. The reason given for shutting down the plant is that the stock of pipe iron has all been used, and the firm did not feel justified in buying skelp iron in the open market at the recent advance in prices and converting it into pipes for which they would not be able to secure any advances over the low prices that have been existing for a long time.

We have already made mention in these columns of a scheme of reorganization of the affairs of J. P. Witherow, at Pittsburgh, by which the business of that gentleman was to be placed in the hands of a committee, and the works run in the interest of the creditors. We are advised that this plan of reorganization is being pushed to completion as rapidly as possible, and in all probability it will become effective within the next 30 days. Much valuable aid has been rendered the creditors in their efforts to reorganize the business of Mr. Witherow by Alexander Thomas, who has had charge of the affairs of Mr. Witherow as assignee since January of this year. The new concern will be known as the Jas. P. Witherow Company, the creditors taking preferred stock for their claims, while Mr. Witherow will take a certain amount of common stock, and will lend his assistance and will be prominently identified with the new organization.

On account of the depression in the iron market, the Isabella Furnace Company, operating the Isabella Furnace at Etna, Pa., have banked down one stack and will probably bank another during the present week.

A meeting of the stockholders of the Wheeling Iron and Steel Company, who represent the consolidation of the interests of the Belmont Nail Company, the Wheeling Iron and Nail Company, the La Belle Iron Works and the Wheeling Steel Works, all of Wheeling, W. Va., will be held in that city on the 4th inst., for the purpose of perfecting details of the new organization. It is probable that at this meeting a board of directors and officers will be elected, and other important business incidental to the new management will be transacted. It is reported that the erection of a beam mill at Benwood is among the proba-

bilities just as soon as the organization of the new concern has been accomplished.

The Chicago Steel Casting Company are getting their new works into smooth running order and taking considerable business. Their office is located in the Unity Building, 79 Dearborn street.

The Avery Steel Mfg. Company will shortly erect a plant for the manufacture of their specialties in or near Chicago. At present they are occupying a portion of an establishment at Forty-third street and Stewart avenue, which was the most available place they could find on their removal from Cleveland to Chicago. Their products are Never Leak mortar and brick hods, corrugated belt bolts, elevator bolts, &c.

Repairs at the mills of the Burden Iron Co., Troy, N. Y., are being hastened, and it is thought work in the merchant will mill be resumed shortly. The mill will be started much earlier than was anticipated, owing to the receipt of large orders that must be filled as soon as possible.

At the Bessemer Steel Works, Troy, N. Y., work is again on full time and about 700 men are employed. The reclaiming of iron scraps that are carted to the dumping grounds in the refuse of the works is a new feature. The method used is similar to the mining of the far West. Superintendent Darby says a full force will soon be placed at work on the dumping grounds.

The Pittsburgh Rolled Car Axle Company of Pittsburgh have been granted a charter of incorporation, with a capital stock of \$25,000.

The Totten & Hogg Iron and Steel Foundry Company of Pittsburgh have received an order from Wm. Clark's Sons Company of that city for one of their new improved 10-inch roll trains complete, consisting of ten three-high roll housings and two three-high pinion housings and bed plate, all complete.

The Dunbar Furnace Company, at Dunbar, Pa., operating the two Dunbar furnaces, closed them down on Saturday, July 30 for an indefinite period. It is understood that the reason for the closing down of this plant is the present depression existing in the pig iron trade, and it is not probable that operations will be resumed until there has been a decided improvement in the iron business.

The Salem Iron Company of Pittsburgh were granted a charter last week, with a capital stock of \$50,000.

We have already made mention of the fact that the men employed in the transportation department of the Edgar Thomson Steel Works, at Braddock, Pa., had applied for an increase of wages. At a conference held last week between the men and Charles M. Schwab, general superintendent of the plant, the request of these men for an increase in wages was discussed and a settlement made. The engineers and yard masters asked for \$3 per day, and were granted an increase to \$2.88 per day; the brakemen formerly working for \$2.25 were increased to \$2.85, and firemen formerly receiving \$1.70 per day were increased to \$1.76 per day. These prices were in vogue at the Homestead Steel Works for the same class of labor before the present trouble occurred. All attempts of the Homestead men to induce the employees of the Edgar Thomson Steel Works to cease work in order to show sympathy with the Homestead strikers have been unavailing, and no trouble of any kind is expected at the Edgar Thomson plant.

At Pittsburgh last week a suit was entered by Ralph Bagley against the Lake Superior Iron Company to recover \$8550, and another by Ralph Bagley, administrator of Mary A. Bagley, to recover \$20,550. The plaintiffs, it is stated, are stockholders in the defendant company, Ralph Bagley owning 9880 shares and the late Mary A. Bagley 24,000 shares. The company held, as an asset, 1371 shares of stock in the Pittsburgh Steel Casting Company, of the par value of \$50 per share. On March 7, 1892, the directors of the defendant company declared a dividend of the stock of the casting company. It was to be divided among the stockholders according to their holdings. The total stock of the defendant company is 80,000 shares. Ralph Bagley's share of the casting company stock would be 171 shares at a par value of \$50 per share, or \$8550. Mary A. Bagley's share was 411 shares, or \$20,550. Demand was made on the company for a transfer of the stock, but it was refused, and the suits are brought to recover the value.

The Muskegon Iron and Steel Company of Muskegon, Mich., have increased their working capital to \$200,000.

The Oxford puddlers, who have been on strike for some time, have returned to work. The men will continue at work at \$3.25 a ton as long as the present prices for iron prevail.

Addyston Pipe Works, the largest in the country, have posted a notice of a shut down for an indefinite period.

The National Tube Works Company of McKeansport, Pa., recently made a shipment of 25 cars of pipe, running from 3 inches to 22 inches in size, to Butte, Mont., for a water system to be built in that locality. A similar shipment of 25 cars will be made in a short time.

The plant of the Scottsdale Iron and Steel Company, of Scottsdale, Pa., which has been closed down for some time on account of repairs, has again resumed operations. This firm recently made bar and sheet iron, having an annual capacity of 8000 net tons of muck bar and 9000 tons of sheet iron. The firm signed the Amalgamated Association scale some time since.

Excavating has been commenced for the erection of the new steel plant to be located on the corner of North River road and Exeter street, Reading, Pa. It is announced that this concern will make a special brand of steel for cutlery purposes, and that an Eastern firm will take the entire product. The main building will be 40 x 160 feet, and will be constructed of brick and corrugated iron. Walter Steele is mentioned as being prominently identified with the new concern.

The Joliet Sheet Rolling Mill, at Joliet, Ill., is doing remarkably good work for a new mill. The machinery is running very smoothly and the product turned out is of a very high character, and although the brand is new, it is already establishing a reputation for quality and finish. The manner in which the output of this mill has been taken by the trade of the Northwest is exceedingly gratifying to the owners, who had counted to some extent on local pride, but thought there might be difficulty in marketing the entire output at once. The capacity of the mill is now covered for several months by sales made.

The Minerva Furnace, at Milwaukee, Wis., has been completely overhauled, preparatory to an early resumption of activity. Two fire-brick stoves of the Hugh Kennedy pattern have been erected. The size of these stoves is 18 x 60 feet. The engines and boilers have been repaired and put in very good condition by the E. P. Allis Company of Milwaukee. The capacity of the furnace, as improved, will be 100 tons daily. It will be the aim of the management to make soft strong foundry iron, intended to take the place of Ohio or American Scotch iron. The furnace will probably be blown in some time in August. Forsyth, Hyde & Co., 67 and 69 Dearborn street, Chicago, are sales agents.

The Northwestern Iron Company of Mayville, Wis., are building two fire-brick stoves, each 18 x 60 feet, of the type patented by C. H. Foot, manager of the blast furnace department of the Illinois Steel Company. The Foot stoves have accomplished remarkable results in economy of fuel and efficiency of operation at the blast furnaces where they have thus far been introduced.

The Cherry Valley Iron Company of Leetonia, Ohio, have signed the Amalgamated Association iron scale. The product of the firm consists of muck bar and merchant bars, the annual capacity being 15,000 net tons. The Cherry Valley Iron Company also operate the Cherry Valley Furnace at Leetonia, Ohio, having an annual capacity of 50,000 tons of pig iron.

Machinery.

The Novelty Stamping Company have been organized at Bellaire, Ohio, with a capital stock of \$100,000, and the following officers were elected: M. L. Blackburn, Findlay, Ohio, president; A. Klotz, vice-president; W. C. Burgenthal, secretary.

Mason & Foard Company of Eddyville, Ky., announce that they have sold to C. W. Metcalfe their entire interest in the Southern Mfg. Company of that place, together with the entire plant and good will.

The Chicago Heights Land Association have made a contract with the Canedy Mfg. Company for the removal of their works from Downer's Grove, on the Chicago, Burlington & Quincy Railroad, to Chicago Heights, a suburb of Chicago. The contract provides that the Canedy Company shall begin work by September 15 with 200 men. The new plant of the company will be located in the triangle bounded by the Elgin, Joliet & Eastern, Joliet Cutoff & Chicago and Eastern Illinois railroads, and will front on Main street. The company manufacture tools, drills and forges. The plans for the new building have been made and the contracts for material have been let. The building will be two stories high, 350 feet long and 200 feet wide. The wood-working shop will be 200 x 100 feet in dimensions.

The Harrison Safety Boiler Company, Germantown Junction, Philadelphia, have an active demand for their safety boiler, especially among their old customers. We are informed that the company are now installing the fol-

lowing among others—viz.: 268 horse-power for the Brown & Sharpe Mfg. Company, Providence, R. I.; Provident Life & Trust Company, Philadelphia, 300 horse power; Penn Mutual Life Insurance Company, Philadelphia, 116 horse-power; 150 horse-power to the Hotel Arragon, Atlanta, Ga.; 175 horse-power to the Convent of St. Elizabeth, Andalusia, Pa.; 160 horse-power to the New Hampshire College of Agriculture and Mechanic Arts; 300 horse power to the Philadelphia National Bank, Philadelphia; 100 horse power to the Lycoming Opera House, Williamsport, Pa., besides a small 60 horse-power Harrison for the residence of L. Z. Leiter of Washington, D. C. The Harrison Safety Boiler Company have branch offices in New York, Chicago and Atlanta, Ga.

The Barr Pumping Engine Company of Eighteenth street and Lehigh avenue, Philadelphia, are able to report a very satisfactory development of business since their inauguration four years ago. Their shops are full of work, and orders for their pumping engines are received regularly and in increasing numbers from all parts of the country. In particular, a large demand has been secured for the company's new Underwriters' fire pump, specially designed to meet the specifications of the Associated Factory Mutual Insurance Company. These pumps are turned out in four sizes, delivering respectively 250, 500, 750 and 1000 gallons per minute. A very full line of pumps for various purposes are manufactured at these works, including duplex water works pumping engines—hitherto the company's staple production—artesian well pumps, sewage, vacuum and oil pumps, &c., as well as pumps made for use in the manufacture of sugar, a specialty for which a considerable and increasing export business is developing, especially with Cuba. The company's works are very favorably placed on the line of the Pennsylvania Railroad Company—the buildings including a large three-story machine shop, equipped with a fine assortment of machine tools made to special designs for the peculiar work required. Also an erecting shop, pattern shop, offices, &c., together with a spacious yard, which affords ample room for future extensions of plant. A new pattern shop will shortly be erected, and other improvements are contemplated to keep step with the growth of business.

The Philadelphia Engineering Company of Philadelphia have, we learn, an exceptionally large amount of work on hand at the present time in filling several important contracts from the Government and private parties. The business of the company has increased very rapidly of late, and in order to meet it they are about erecting a new building 50 x 100 feet, to accommodate the smith's and boiler shops, the space at present occupied by those departments being required for additional tools and other exigencies of manufacture. The new building is to be constructed of brick and iron and will be entirely fire proof. Among other additions to their plant which the company contemplate carrying out in the near future is a new foundry 200 x 100 feet. The following are some recently completed orders shipped from the Philadelphia Engineering Works: Two tandem compound engines, 1200 horse-power, for the Omaha & Grant Smelting & Mining Company of Denver, Col.; one 22 x 40 x 60 tandem compound condensing engine for the Aurora Cotton Mills, Aurora, Ill.; 1500 horse-power engine for the Belfontaine Street Railway Company, St. Louis, Mo., and 500 horse-power engine for the Southern Electric Light Company, Philadelphia. The company are now building two 500 horse-power cross compound condensing engines of the Philadelphia Corliss type for the Thomson-Houston Company, Hoboken, N. J. These engines are constructed to a special design for use in connection with that company's new system of multipolar generation. Two considerable Government contracts are also in hand, one being for the entire fire plant, including a pair of coupled engines with boilers, pumps, &c., for the United States Arsenal at Watervliet, and the other for the fire plant of the United States Arsenal at Springfield, Mass., which comprises two coupled tandem compound engines with a special equipment of Babcock & Wilcox water-tube boilers, with pumps, &c. In addition to these contracts, the company are busy with a large volume of smaller work.

The Holly Mfg. Company of Lockport, N. Y., will exhibit some of their pumps and engines at the Columbian Exhibition at Chicago. They will probably erect a medium sized engine capable of pumping between 5,000,000 and 6,000,000 gallons daily; also a vertical engine and pump.

Warren Webster & Co. of Philadelphia, who are lessees of the Williams system of steam heating, inform us that the suit brought by Napoleon W. Williams of Philadelphia, in May, 1887, against the Bernard system of steam heating as applied by the Ingersoll Rock Drill

Company of New York, for infringement of patent, was decided last week in the United States courts, New York, a decree having been given in favor of Mr. Williams, the plaintiff. They report orders for their Webster Vacuum Exhaust Steam Economizer during the month of July to have been exceptionally large. The following are some of the supplies made during that period: Loraine Mfg. Company, Loraine, 750 horse-power; D. M. Bare & Co., Roaring Springs, Pa., 1000 horse-power; N. & G. Taylor Company's new tin-plate factory, Philadelphia, 100 horse-power; Harrisburg Boot and Shoe Company, Harrisburg, Pa., 100 horse-power; J. Horace McFarlane & Co., Harrisburg, 150 horse-power; Mount Holyoke Seminary and College, 125 horse-power; Onondonk Heating and Ventilating Company, Philadelphia, 130 horse-power; Detroit Sheet Metal and Brass Works, Detroit, Mich., 125 horse-power; Pennsylvania Steel Company, Steelton, Pa., one of 2000 horse-power and one of 400 horse-power; Savannah Gas Works, Savannah, Ga., 160 horse-power, and Carlisle Water and Gas Company, 200 horse-power.

It is stated on reliable authority that the Queen & Crescent Railroad will erect and equip extensive shops at Chattanooga, Tenn., to employ not less than 1000 hands.

J. N. Rogers has purchased the Asheville, N. C., foundry and machine shop and is erecting new buildings and increasing the capacity of the plant.

The Triple Wire Nail Works at Bridgeport, Ala., will be ready to start up in a month or six weeks. The new buildings are nearly completed and most of the machinery is on the ground. The company will manufacture triple wire nail machines, saw mills, Excelsior machinery, &c.

The iron foundry and machine shop business of Burr & Bailey, Wilmington, N. C., has been incorporated under the name of the Burr & Bailey Company.

In a circular dated August 1, Geo. V. Cresson of Eighteenth street and Allegheny avenue, Philadelphia, informs his friends and patrons that the Philadelphia Shaving Works, heretofore conducted by him, have been incorporated under the name of Geo. V. Cresson Company. The personnel of the former management remains, however, unchanged, the officers being George V. Cresson, president and treasurer; Antonio C. Pessano, vice-president and general manager; E. Oscar Haeuptner, assistant treasurer; Morris W. Rudderow, secretary and business manager.

The foundry of the Rhode Island Perkins Horseshoe Company, at Providence, R. I., will shortly be operated under lease by Pittsburgh, Pa., parties.

The foundry of the Bellefonte Car Works at Bellefonte, Pa., has been destroyed by fire at a loss of \$10,000.

Hardware.

The Traut & Hine Mfg. Company, New Britain, Conn., have decided to enlarge their factory with a four-story addition, 75 x 50 feet, to keep pace with their increasing business. The building is now in process of construction. The company have recently purchased the business of the Adams & Knowles Mfg. Company of Providence, R. I., and will remove it to New Britain. A portion of the new building will be utilized in the production of the goods of the latter concern. Over 200 hands will be employed in the factory when projected arrangements are completed.

The Keystone Horse Shoe Company of Philadelphia have started their mills afresh after a shut down of three weeks. They are now running to about three-fourths capacity on double turn. In consequence of a concession on the part of their workmen that all iron rolled on the 16-inch train shall be paid for on the large mill scale, the company signed the revised wage scale on that basis. Hitherto the men have been paid for a portion of their product on the 10-inch or small mill scale, but as skelp iron, which is at present the company's sole production, has but one price, the firm were of opinion that the labor should be remunerated at only one rate as well. This was agreed to by the employees after a friendly conference with the members of the firm; and, therefore, the company's action can hardly be interpreted into a triumph for the Amalgamated Association, although such has been claimed in some quarters. Certainly the men principally concerned do not regard it in that light.

The Bronson Supply Company, Cleveland, Ohio, report that they are in receipt of a large number of heavy orders within the last week or two. Many of the orders, we are advised, have been taken personally by representatives of the company, the mails bringing also something from parties whom the travelers have not as yet been able to reach. The company are increasing their facilities and are at the present time contracting for the erection of additional buildings and improvements.

Miscellaneous.

The Youngstown Stamping Company of Youngstown, Ohio, manufacturers of tinware and glass oil cans, have just completed the erection of a galvanizing department, and will have it in operation within a very short time. The above addition to the works of this firm will largely increase their capacity for the manufacture of oil cans, for which they are experiencing a very large demand. The firm advise us that they have never before experienced such a busy season as the present one, and have contracts already that insure them a very large summer and fall trade. To meet these demands they have for some time past been increasing their capacity in all departments. The firm are making preparations to add to their line of manufactures a complete line of paint cans, and will have this department in operation within the next 30 days. Their glass furnace is being pushed preparatory to starting up about September 1 next. They are running this furnace exclusively on glass oil cans, and are said to be the only firm in this country who manufacture both the glass body and also the tin jackets and trimmings in the construction of oil cans.

The steel car works plant at Bridgeport, Ala., which has for some time been in litigation in consequence of legal difficulties between the Bridgeport Land and Improvement Company and the South Pittsburg Construction and Building Company, has finally been turned over to the land company, as the result of the arbitration of the difficulty.

The Morristown, Tenn., Co-operative Stove Company are now operating their plant to its full capacity. J. H. Rolen is president of the new organization, E. O'Neil manager, and J. H. McClester secretary and treasurer.

Work at Ducktown, Tenn., on the new furnace and necessary ore sheds is being pushed as rapidly as possible, and the company will soon be ready to turn out copper ready for shipment.

Among recently authorized corporations in Illinois are the following: The Nebraska-Moline Plow Company, Moline; capital stock, \$150,000; incorporators, George Stephens, Andrew Fritberg, G. Arthur Stephens and Frank G. Allen. Phoenix Horse Shoe Company, Chicago; capital stock, \$1,500,000; incorporators, Charles W. Townsend, William C. Arnold and Knud Knudson. The Mill Furnishing & Erecting Company, Chicago; capital stock, \$50,000; incorporators, Alexander A. Welsh, Arnold Scott and James Dinsmore. The Automatic Car & Air Brake Coupler Company, Madison; capital stock, \$10,000,000; incorporators, James B. Thomas, Murray Carleton and John P. Boogher. The Excelsior Machine & Boiler Works, Chicago; capital stock, \$60,000; incorporators, John Gubbins, James F. Gubbins and Louis Oberndorf. O. K. Stove Company, Chicago; capital stock, \$200,000; incorporators, T. J. Prendergast, P. J. Kearns and E. F. Masterson. The Illinois Zinc Company, Peru, filed a certificate of increase of capital stock from \$400,000 to \$1,000,000.

Edds, Mixter & Heald are preparing to greatly enlarge their zinc smelting works at Clinton, Tenn.

The Indianapolis Car Works are to be removed from Indianapolis to South Milwaukee, Wis. The concern is to receive twenty-five acres of land and a bonus of \$10,000 from the South Milwaukee Land Company.

The Ehman & Simon Mfg. Company, Fulton and Elizabeth streets, Chicago, are constantly getting out new patterns of wood mantels and mantel tops. They have put on the market no less than 30 new designs for the fall trade. They report that the taste of the public in the matter of mantels is now running to the colonial style. The mantels are made with larger openings than heretofore in order to show tile effects. The company have latterly been carrying on a very good trade with the Pacific Coast. A recent shipment covering five carloads was made to a single building in San Francisco. They are also doing some export trade. The people of Great Britain are being educated to the use of wood mantels now, and the prospects are favorable for the development of a considerable trade in that direction, following in the footsteps of the exporters of furniture.

The announcement by the Giant Powder Company of West Berkeley, Cal., that they propose to rebuild the works which recently exploded is meeting with loud protests from the residents of that place, who denounce such a plant as a constant menace to life and property. In case an amicable settlement is not reached with the company the law will be invoked. Several persons were killed and great damage done to property by the recent blowing up of these works.

The Novelty Stamping Company have been organized by Bellaire, Ohio, people, with a paid-in capital of \$100,000.

TRADE REPORT.

The impression is general in the Iron trade that the backbone of the Homestead strike is broken, and that it will not be long before the different Carnegie mills will be running full, as non union works. One leading Pittsburgh mill is spoken of as likely to follow in the footsteps of the Carnegies, by refusing to recognize the Amalgamated Association. If the proposal to arbitrate under the Wallace act is accepted by the men the Western mills will generally start up pending a settlement and the present scarcity of certain lines of Finished Iron and Steel will give way to abundance. As it is, the number of mills working is steadily increasing East and West. A compromise has been reached in the Western Wire drawing scale and the Wire mills are about to start up.

Opinions differ concerning the effect of a general resumption of operations. Some hold that the advances secured during the past month will not be altogether lost. Others argue that a decline below the old figures is probable. They point to the accumulation of Raw Material. The statements emanating from Cleveland that the bulk of the Ore there is sold are received with doubts. Bargains are cropping up frequently.

Bessemer and Forge Pig has accumulated heavily during July in the West, so that the low prices now prevailing and likely to continue must affect Steel Billets and the whole line of Soft Steel products. The great accumulations of Old Material seem likely to enable Iron rolling mills to cut down their costs very materially. Finally, in the prospective relation between supply and demand, the reductions in cost through the lowering in wages will be largely given away to buyers.

Pig Iron is dull in nearly all the markets. In Pittsburgh, sales of Bessemer have been made at \$13.90, delivered, while in Chicago, Southern Iron is still exerting a heavy pressure, Gray Forge having been sold under exceptional circumstances as low as \$12, equivalent to \$8.15, Birmingham. Cleveland notes some large sales of Foundry Iron. The situation in the Cast-Iron Pipe trade seems serious, the Addyston Works, the largest in the country, having closed down.

Old Material is accumulating all over the country, and sales can only be effected by sharp concessions. Steel Billets are scarce for prompt delivery, but buyers do not show the slightest disposition to contract ahead now for future delivery.

Muck Bars are held higher East and West, but there is little business going.

Steel Rails are wretchedly dull in all markets, the principal trouble apparently being that the railroads are too poor to pay for material.

In Manufactured Iron and Steel the demand for quick delivery is active, and the mills which are running are getting the advance established lately. There are indications, however, that some sellers are less independent than they have been.

The labor troubles in the New York building trade have led to a virtual suspension of all new business. They enable the mills to take better care than they otherwise could have done of the business which has come to them from other sections.

Copper is dull, while Tin has experienced a rapid rise, checking business at the higher figures. Lead and Spelter are dull. Tin Plates show very little life.

Chicago.

(By Telegraph.)

Office of *The Iron Age*, 59 Dearborn street,
CHICAGO, August 3, 1892.

A better feeling exists in finished products. The demand is greater than that of last week and prices are perceptibly stronger. This is, of course, due to the continued scarcity of all kinds of Iron and Steel, caused by the stoppage of Western mills, and therefore cannot be regarded as a legitimate condition in every sense. Yet it is a condition and must be recognized, inasmuch as consumers are compelled to pay more money than they did in June. It is a question how long the firm feeling will exist after the mills get into operation. They are fast dropping into line now, and the general belief prevails that by the middle of the month production will again be in full swing in every line.

Pig Iron.—The Coke Iron situation shows no improvement. The sellers of Southern Coke continue to make low offerings, and in many cases have so thoroughly demoralized consumers that they fear to purchase, even at the lowest prices they have ever known. Southern Gray Forge has been offered in a small way at \$12, Chicago, which is a lower price than had been deemed possible. The Iron thus offered is not a criterion of regular shipments, but is understood to be a spot lot of a few carloads which had to be sold. Other grades of Southern Iron participate in this weakness, but the best known brands are held firmly. A few good sales have been made during the past week to large consumers for season delivery. Northern Coke Iron is affected to some extent by the very low values of Southern Iron, but the manufacturers are not nearly so weak. They refuse to make more than slight concessions. The business in local Coke Iron has been fair, notwithstanding the elements with which the trade has been obliged to contend. The market for Lake Superior Charcoal continues quite strong. Makers show no particular pressure to sell. The Malleable manufacturers are taking more Iron than they had originally expected, and inquiries are coming from other consumers who have not yet covered their full requirements. We make no change in quotations, as the figures given are the prices at which purchases would be made in a regular way. Quotations are as follows, cash, f.o.b. Chicago:

Lake Superior Charcoal	\$16.50 @ \$17.00
Local Coke Foundry, No. 1.....	14.50 @ 15.00
Local Coke Foundry, No. 2.....	14.00 @ 14.50
Local Coke Foundry, No. 3.....	13.50 @ 14.00
Local Scotch	15.00 @ 16.00
Ohio Strong Softeners.....	16.25 @ 17.00
Southern Coke, No. 1.....	14.50 @ 15.00
Southern Coke, No. 2.....	13.25 @ 13.60
Southern Coke, No. 3	12.75 @ 13.00
Southern, No. 1, Soft	13.25 @ 13.60
Southern, No. 2, Soft	12.75 @ 13.00
Southern Gray Forge	12.50 @ 13.00
Southern Mottled	12.50 @ 12.75
Tennessee Charcoal, No. 1.....	17.50 @ 18.00
Alabama Car Wheel	21.00 @ 22.00
Coke Bessemer.....	..... @ 15.50
Hocking Valley, No. 1	17.00 @ 17.50
Jackson County Silvery.....	17.00 @ 17.50

Bar Iron.—A very good volume of business is being done, but in a small way rather than in the placing of large orders. Consumers are in urgent need of immediate shipments, and although they are buying but a few carloads each the aggregate is very satisfactory to the mills in a position to take advantage of this class of trade. Orders are being cancelled every day for non-shipment, as it has latterly been very hard to get mills to make deliveries in good season. In spite of this condition of trade, however, some of the smaller mills are so fearful that they may not get business that they are quoting considerably under the market price, which is 1.65¢ @ 1.70¢, half extras, Chicago. Some car orders are developing which promise considerable business in the near

future; an immense amount of Car Iron has been run out of stock in stores during the past month, and merchants now are suffering from broken assortments; they are holding prices firmly at 1.90¢ @ 2¢ for Bar Iron and 2¢ @ 2.10¢ for Bar Steel. Manufacturers of Bessemer Bars are now quoting 1.70¢ @ 1.75¢, Chicago, on account of the scarcity and higher prices of Steel Billets.

Structural Iron.—Quite a number of contractors and builders have been badly caught by the advance in the price of Beams and other Structural material, and will either make no money or very little on work which they now have in hand. The mills in shape to take contracts for Beams are asking 2.30¢ @ 2.35¢. Chicago for round lots, mill shipment, and 2.50¢ for small lots from stock-yards carried here, which are now very light. Angles are hard to get except from Eastern mills, and they are asking almost prohibitory prices. Small quantities from stock are quoted at 2.20¢ @ 2.25¢ for Angles, 2.40¢ @ 2.60¢ for Tees, and 2.30¢ @ 2.40¢ for Sheared plates.

Plates, Tubes, &c.—Trade has picked up considerably, both in mill orders and from stock; quotations from mill vary widely. A recent inquiry sent to a dozen mills brought out prices covering a range of \$5 per ton. The makers of Tank Steel report it difficult to get Billets, and are therefore asking advances on old rates, which makes their quotations from 2.10¢ to 2.30¢. Chicago Flange Steel can hardly be had now at less than 2.45¢; Shell Steel is available at 2.30¢; prices from store are firmer than they have been and stocks are running down very rapidly; Boiler Tubes are firm at 67½¢ discount from stock.

Sheets.—A heavy demand is reported for Galvanized both for carload orders from mill and small lots from stock. Standard makes are quoted at 70% and 70 and 5% for mill shipment and small lots 67½% @ 70% discount for Juniata quality. Large orders are also in the market for Black Sheets and the general quotation from mill is 2.95¢, Chicago, for No. 27; common small lots from stock are quoted at 3.20¢.

Merchant Steel.—The demands of heavy consumers now seem to be about satisfied and orders for cheap Steel are for scattering carload lots; quotations on these are unchanged at 2¢ @ 2.20¢, Chicago, for Machinery, Open-Hearth, Spring and Tire; store prices are about 25¢ per 100 above these rates; Tool Steel is in good demand with prices unchanged.

Billets and Rods.—Inquiries are in the market for considerable quantities of Steel Billets coming from a wide range of country, including territory not usually tributary to this market. The scarcity of Billets at Pittsburgh, however, has not reached a point at which consumers are willing to pay Chicago prices, which are unchanged at \$24.50. The Wire Rod situation continues in favor of the manufacturers, who maintain prices at \$34.50.

Rails and Track Supplies.—The Steel Rail trade shows no improvement, the sales of the past week having been confined almost entirely to light Rails. Standard sections are still quoted at \$31 @ \$32.50, according to quantity. Splice Bars are quoted at 1.75¢ @ 1.90¢ for Iron and Steel. Track Bolts, Hexagon Nuts, 2.65¢ @ 2.70¢; Spikes, carload lots, 2.05¢ @ 2.10¢.

Old Rails and Wheels.—The only sale of Old Iron Rails reported for the past week was one of 500 tons, delivery at Duluth for shipment by water to some Eastern point. Dealers quote prices here nominally \$18 @ \$18.25. Old Steel Rails are very quiet, and are quoted at \$12 @ \$13, according to condition. Small sales

of Car Wheels are taking place at \$15 @ \$15.50. On round lots this price would, of course, be shaded.

Scrap.—Business has been very dull. Some little improvement is reported in Steel, but there has been no demand for forge or mill. Cast is not active, as many foundries have latterly been running light on account of hot weather. Some of the local dealers are still piling up Scrap in the hope of being able to do business some time in the future. Prices are largely nominal in the absence of transactions. Prices are as follows, per net ton: No. 1 Railroad, \$16 @ \$16.50; No. 1 Forge, \$15 @ \$15.50; No. 1 Mill, \$11; Pipes and Tubes, \$10; Horseshoes, \$15.50; Sheet Iron, &c., \$7; Cast Borings, \$5.75; Wrought Turnings, \$8; Axle Turnings, \$9.50 @ \$10; Machinery Cast, \$11.50 @ \$12; Stove Plate, \$9; Malleable Cast, \$10; Car Axles, \$18.50 @ \$19; Fish Plates, \$17.25; Mixed Steel, gross ton, \$10.50 @ \$11; Coil Steel, \$15; Leaf, \$16.50, and Tires, \$15.

Metals.—Lake Copper shows increasing strength and is now quoted at 12.25¢ in carload lots and 12.50¢ in small lots. Casting brands are unchanged at 11½¢ for carloads and 11½¢ for small lots. Pig Lead has been sold to the extent of about 400 tons at about 4¢ and Spelter is unchanged at 4.75¢ carload lots.

Pittsburgh.

Office of *The Iron Age*, Hamilton Building, Pittsburgh, August 2, 1892.

The principal event of the week under review was the submitting of a proposition to the Conference Committee of the Amalgamated Association by the Pittsburgh manufacturers agreeing to refer the differences existing over the settlement of the Iron scale to arbitration. The proposition as made by the manufacturers and other information concerning it will be found elsewhere in this issue. A vote is now being taken by the Western lodges of the Amalgamated Association as to whether the proposition will be accepted or rejected. On Tuesday, the 9th inst., the two Conference Committees will come together in this city, when it is expected that action looking to a settlement of the differences will be taken. In addition to asking the Western lodges to vote on the acceptance or rejection of arbitration, the Conference Committee of the Amalgamated Association has also asked that it be given full power to treat with the manufacturers and change the base rates in the scale, should it be necessary to do this to bring about a settlement. This leads us to believe that a settlement, or an arrangement at least, will be effected at the meeting on August 9 that will permit the idle mills to resume operations. Last week was a very favorable one for the Carnegie Company, Limited, and it is now admitted on all sides that the firm have achieved a signal victory over the Amalgamated Association, and that the Homestead Steel Works will soon be in full operation in all departments. An announcement from the Amalgamated Association that the strike at Homestead has been declared off, and advising the men to return to work, may be forthcoming at any time. As soon as Homestead is running full, the other idle mills of the Carnegie Steel Company, Limited, will be put in operation, with the exception of the Beaver Falls Mills, and this plant may be allowed to remain idle. Prices on raw material during the week have shown a decided weakening, and a break in the price of Bessemer Pig has taken place. In finished material the recent advances, while seemingly maintained, have been checked and the favorable outlook for a resumption of operations in the mills by August 15, at the latest,

will do much to prevent any further advances in prices.

Pig Iron.—The continued shut down of the mills and the stoppage of shipments of Iron that had been contracted for some months since, has caused a rapid piling up of stocks at furnaces. In addition to this there has been a very limited amount of Iron sold during the last few months, which has made the position of furnace operators a particularly severe one. As against all this, prices have been fairly maintained up to the past week, when a decided break occurred in Bessemer, a sale having been made at \$13.90, delivered, and a report is going of another sale at a price slightly under the above figure. Since our report of last week one stack in the Mahoning Valley has been banked down, Sharon of the Sharon Iron Company, Limited, in the Shenango Valley, has blown out and the two Dunbar stacks at Dunbar have been banked. In addition to the above, the Isabella Furnace Company of this city have banked one stack and may bank another before this week is out. That any action taken by which the output of Pig Iron will be decreased is a good business move goes without saying. If the decreased production shown since March 1 last can be maintained, or better still, if further restrictions in output can be accomplished, it will be a good thing for the Pig Iron trade. The present prices ruling for Iron show pretty effectually the result of continuing to turn out Iron when there is no place to put it. Of course the prospect of a resumption in the idle Steel and Iron mills is a pleasing one, but nobody will pretend to say that this will result in an improvement in the market right off. The large stocks of Iron piled up at furnaces everywhere should dispel that illusion at once. These immense stocks must be reduced, and very materially too, before the long hoped for turn in the market will be a reality. As we note above Bessemer has sold within the last week at \$13.90, and the claim is made that this price could be shaded by a buyer with a good order to place for prompt shipment. Foundry and Forge Irons do not show any improvement and there is very little doing in either brands. City makers of Gray Forge Iron continue to claim that they are getting \$12.75 delivered for what Iron is being sold. We quote as follows:

Neutral Gray Forge.....	\$12.50	12.75	cast
White and Mottled.....	12.25	12.50,	"
All-Ore Mill.....	12.50	12.75,	"
No. 1 Foundry.....	14.25	14.50,	"
No. 2 Foundry.....	13.25	13.50,	"
Bessemer Iron.....	13.90	14.00,	"
Cold-Blast Charcoal.....	23.50	24.00,	"

We note a sale of 2000 tons of Bessemer at \$13.90, delivered, equal deliveries in August, September and October, and a sale of 300 tons of No. 1 Foundry at \$14.35, delivered.

Ferromanganese.—Within the last 30 days a decline of \$2.50 @ ton in this article has occurred, and the open quotation of the only producer here is \$60 @ ton, delivered. If necessary, this price would be shaded in order that the foreign article may be kept out.

Soft-Steel Billets.—Numerous small sales of Billets for spot delivery during the latter part of August and September are being made. These represent amounts ranging from 100 to 500 tons and at prices ranging from \$23.50 to \$24 at makers' mill. We note a sale of 600 tons at \$23.50 for delivery in August and September, 500 tons for August and September delivery at same price and 250 tons at \$24 for August delivery, all f.o.b. at makers' mill. No contracts for delivery up to the close of the year are being made, and it is not expected that any will be made until the idle Steel plants resume operations.

Manufactured Iron.—The outlook for a resumption of operations in the Iron

mills, which have been closed since June 30, is better now than at any time since the shut down occurred. As we note elsewhere in this issue, a vote is now being taken by the Western lodges of the Amalgamated Association as to whether the propositions made by the Pittsburgh manufacturers in conference to submit the whole matter to arbitration shall be accepted or rejected. In addition to this, the Western lodges have been asked by the Conference Committee of the Amalgamated Association to grant them full power to bring about a settlement in case the proposition to arbitrate is rejected. The Conference Committee of the Amalgamated Association has represented right along that their powers were limited, and did not permit them to make any changes in the different bases in the scale. If this claim is true, it seems strange that the Pittsburgh manufacturers would hold meeting after meeting with a Conference Committee that was practically without power and existed in name only. Now that this committee has requested the lodges to grant them full power to make any settlement they may deem best, it is very likely that action of great importance to the Iron trade will be taken at the next meeting of the Conference Committees to be held in this city one week from to-day. This is the first time since the passage of the Wallace act in 1883 that either the manufacturers or the workmen employed in the Western mills have made a request for arbitration to settle labor disputes. It is understood that if a board of arbitrators is appointed it will be composed of not less than three persons and probably five; the arbitrators will be appointed by the judges of the courts of Allegheny County, and these arbitrators will be allowed 60 days to hear testimony bearing on the case and to render their decision. In addition to agreeing to refer the whole matter to arbitration, the Pittsburgh manufacturers have agreed to start up their mills, pending a settlement, as soon as the Amalgamated Association has signified their consent to accept the proposition for arbitration. Since our report of last week Brown & Co., incorporated, of this city have signed the scale, and the signature of this firm can be considered as a very important one. They make a line of Merchant Bars which have an excellent reputation among the trade, and it is thought that their action in signing the scale was due to the fact that their customers insisted on being furnished with material, and in addition some contracts booked some time ago had to be filled. Advices have just reached us that the Akron Iron Company of Akron, Ohio, have also signed. This may be considered the first break in the ranks of the Mahoning and Shenango Valley manufacturers, as a representative from the Akron Iron Company attended the meeting of the Conference Committees representing the Mahoning and Shenango Valley Bar Iron makers and the Amalgamated Association, which was held in this city during the latter part of June. The recent advance in nearly all lines of finished material seems to be fairly well maintained, although only a moderate amount of business is being done. A great deal of transferring of orders from one section to another has been going on for some time past, and the advantages derived from increased prices obtained for some time by non-union mills and others that signed the scale have been very considerable. As the prospect now is that a number of the mills will resume operations somewhere between August 10 and 15, it will probably have the effect of checking any further advance in prices. Customers will no doubt hold off placing orders, expecting to do better when operations have been resumed. That the shut down of more than a month among so many mills has been beneficial is beyond doubt; a general cleaning up of stocks has

resulted and buyers are ready to place orders just as soon as they are assured they can get the material, and they will not lose anything by buying. As we stated last week, No. 1 Bars are bringing from \$2 to \$8 per ton more than before the shut down occurred, and we continue our quotations on these of 1.70¢ @ 1.80¢ for Bars of best grade. Old Rail and Scrap Bars are readily bringing from 1.55¢ to 1.65¢, No. 24 Sheet is firm at 2.70¢ @ 2.80¢ and Refined Steel Bars are bringing 1.75¢ @ 1.80¢, all 60 days, 2% off for cash.

Structural Material.—A partial resumption of operations in the new Beam mill at Homestead has taken place, and before this week is out it is expected that the 23-inch and 33-inch mills of this plant will be in full operation. If this proves true, the Carnegie Steel Company, Limited, will be in the market with Structural Shapes of all kinds not later than the middle of the month. We are also advised that the Columbia Iron & Steel Company, of Uniontown, Pa., are ready to start up, and several conferences have been held between the firm and the Amalgamated Association looking to the signing of the scale. This may take place within a very short time, when the firm will at once put their plant in operation. As yet Pittsburgh is not in position to market any Structural Shapes, and is therefore unable to take advantage of the recent advances, amounting to \$3 and \$4 per ton, which have taken place. It should be noted that prices quoted below apply to Pittsburgh only, as it is understood that other sections are getting higher prices than we name. We quote as follows: Beams and Channels on a basis of 1.90¢ @ 1.95¢ for desirable orders and 2¢ @ 2.05¢ for small lots; Angles we quote at 1.80¢ @ 1.90¢; Universal Mill Plates, Steel, 1.80¢ @ 1.90¢; Universal Mill Plates, Iron, 1.75¢ @ 1.80¢; Tees, 2.35¢; Refined Iron Bars, 1.70¢ @ 1.75¢; Steel Bars, 1.70¢ @ 1.75¢; Sheared Bridge Plates, 1.95¢ @ 2.05¢.

Wire Rods.—There is little doing, and it is almost impossible to name prices that will correctly represent the market. A story is going the rounds here that a Pittsburgh concern making Wire Rods was compelled to pay their boss Rod roller 45¢ per ton before they could start up their mill. This was in the face of the fact that the Amalgamated Association made a reduction of 33½% in Rod rolling, bringing the price down from 45¢ to 30¢. When the firm sent for their Rod roller and asked him to start up the mill he emphatically declined to do so unless he was paid the old rate of 45¢ for rolling. The story goes that the firm agree to pay this price, as the Rod roller, in connection with another party, controlled some improvements in use in this particular mill which are not in use in any other similar plant in the country. Members of the firm who were visited and asked to either confirm or deny the story refused to make any statements whatever. In the absence of sales since our report of last week, we repeat quotations made at that time, which were \$31.50 @ \$32, f.o.b. at makers' mill. A good order put on the market would, no doubt, be taken at considerably less than the above prices.

Skelp Iron.—Since our issue of last week the Continental Tube Works, operated by the Oil Well Supply Company, has been closed down in all departments. The firm state as their reason for closing down the works that they could not afford to go into the market and buy Skelp at present prices and market it in the shape of Pipes and Tubes and come out whole. The recent advances in the price of Skelp are firmly maintained, and Pipe and Tube mills are experiencing considerable difficulty in procuring a sufficient supply to keep in operation. We repeat quotations of last week as follows: Narrow Grooved,

1.65¢ @ 1.75¢, and Sheared 1.80¢ @ 1.90¢, four months, or 2% off for cash.

Muck Bar.—A growing scarcity of this article is noticeable, and those who have Muck Bar to sell advise us that they have no difficulty in getting \$24.75 for the best grades. Some inferior grades are in the market, which are obtainable at slightly less than the above figures. We note a sale of 300 tons of best grade of Muck Bar at \$24.70, delivered at buyers' mill.

Merchant Steel.—An increased business is noted chiefly among the cheaper grades. Three of the largest manufacturers of Merchant Steel in this city are operating their plants full time, and it is stated a number of good orders have been taken within the last week or ten days. It is a remarkable fact that the largest makers of Steel in finished shapes in this city are not governed by the Amalgamated Association, but operate their mills with non-union men, and have for some years past. For this reason these firms have a decided advantage over their competitors who still continue to employ Amalgamated Association labor, and have therefore been compelled to keep their plants closed down on account of the labor disputes.

Steel Plates.—The remarks made above regarding Structural Material apply very well to this class of manufacture. Some concerns in this city that have been temporarily out of the market on account of labor troubles will be in position to fill the wants of their customers inside of the next two weeks. We repeat quotations made last week, as follows: Flange, 2¢ @ 2.10¢; Fire Box, 3.50¢ @ 3.75¢; Shell, 2¢ @ 2.10¢; Tank, 1.75¢ @ 1.85¢, f.o.b. Pittsburgh.

Steel Rails.—There is nothing new to report this week. The slight labor difficulty at the Edgar Thomson Steel Works referred to in our report of last week has been satisfactorily arranged, and no trouble of any kind is expected with the workmen at this plant. The failure of the Homestead strikers to induce the Edgar Thomson employees to go out on strike was a severe disappointment, but at the same time showed the wisdom of the Edgar Thomson men.

Wire and Cut Nails.—The shut down of a number of mills has resulted in a considerable decrease in stocks, and as a result prices are firmer and tending upward. One of the largest makers in this city advises us that not for years has their stock of Wire nails been so low as at the present time. If Billets continue to command present prices a further advance in price of Wire Nails is probable. We quote the market at \$1.65 @ \$1.70, in carload lots, and \$1.75 @ \$1.80 in less quantities. There is nothing new to report in the Cut Nail situation. But few mills are running and these seem to be able to take care of all the business going without any trouble. We quote the market at \$1.47½ @ \$1.50, in carload lots, f.o.b. at factory.

Barb Wire.—Under recent date the Pittsburgh Wire Company issued an announcement to the trade, in which they stated that after a few months production of Wire Rods only they are now prepared to furnish a full line of plain Wire. They stated that their mill is well located and equipped with the latest improved machinery and appliances. In this district the mills of the Braddock Wire Company and the Oliver & Roberts Wire Company are in operation. We continue to quote Barb Wire at \$2.25 @ \$2.35 for Painted, and \$2.70 @ \$2.75 for Galvanized, f.o.b. at factory.

Scrap Iron and Steel.—A tour among the dealers in Scrap material showed that there has not been any improvement what-

ever in the Scrap market. No sales of any consequence are reported, and offers of material at very low prices are not considered by buyers. A well-informed dealer in this city advises us that there are piled up in Pittsburgh at the present time between 8000 and 12,000 tons of No. 1 Wrought Scrap, which is a sufficient quantity to fill demands from this market for a year to come. We continue nominal quotations as follows: No. 1 Railroad Wrought Scrap, \$13.50 @ \$14 per ton; Cast Scrap, \$11.50 @ \$12 per gross ton; Billet and Bloom Ends, \$16 per ton; Cast-Iron Borings, \$6.50 @ \$7 per gross ton; Railroad Coil Springs, \$17.50 @ \$18 per gross ton; Leaf Springs, \$19.50 @ \$20; Old Steel Axles, \$18 @ \$19 per gross ton.

Old Rails.—There is nothing new to report, with the exception that a small lot of Iron Rails were sold in this city last week at \$18, delivered at buyer's mill. Old Steel Rails do not seem to be wanted by any one, and no sales are being made. We make nominal quotations as follows: Old Steel Rails, short pieces, \$15.75 @ \$16; long lengths, \$15 @ \$15.25; miscellaneous lengths, \$14.75 @ \$15. Old Iron Rails may be quoted nominally at \$19 per ton, but a buyer could no doubt shade this price very materially.

The offices of the Pennsylvania Tube Works, manufacturers of Pipes and Tubes, have been removed from 165 First avenue to the Vandergrift Building on Fourth avenue, Pittsburgh.

Cleveland.

CLEVELAND, OHIO, August 1, 1892.

Iron Ore.—Some selling has been done during the past week, but, with the labor troubles predominating at Pittsburgh and the general apathy prevailing in the valleys, it is but natural that the demand for new Ore should be small, as compared with the usual condition of the market at this season of the year. Vessel owners are still untiring in their efforts to bring down new Ore at rates which were sneered at earlier in the season. No amount of energy seems successful in forcing the freight rate from Escanaba up to 80¢ per ton or the Ashland and Two-Harbor rate to \$1.20. The present freight rate is unquestionably low, but it is in full sympathy with the general condition of the Iron market. About 95,000 tons of new Ore have been unloaded on the Cleveland docks during the past week, an increase of 20,000 tons over the receipts for the same week in 1891. The receipts at all lower lake ports during the week were not far from 200,000 tons, while for the same week last year about 150,000 tons were unloaded. Ashtabula, although 55 miles further down the lake, is this year receiving an unusually large amount of the new Ore sent down from Lake Superior. Fairport, half way between Cleveland and Ashtabula, is not far behind. Better dock facilities would bring 50 per cent of this business to Cleveland, as a day's time, nearly, could be gained by unloading here instead of at either of the other two ports mentioned. Prices are unchanged. If a 5000 or 10,000 ton lot of new Ore is to be sold, the prices of 1891 must be shaded from 20¢ to 40¢ per ton, with 30¢ close to the average figure. Total sales to date are close to 5,000,000 tons, according to the best estimates.

Pig Iron.—An innovation in the ordinary introduction to the statement preceding the Pig-Iron situation can be introduced this week, for there have been several really important sales of Foundry Iron. Therefore, it cannot be said that the market is entirely without life, as has been stated in as many different ways during the past 10 or 12 weeks. The market has little firmness and little to say for

itself in any way except for an unexpected demand for Foundry Irons, and not for immediate delivery at that. Following are quotations:

Nos. 1 to 6 Lake Superior Charcoal \$16.50 @ \$17.00
 Nos. 1, 2 and 3 Bessemer, per ton. 14.25 @ 14.50
 No. 1 Strong Foundry, per ton. 14.75 @ 15.25
 No. 2 Strong Foundry, per ton.. 13.75 @ 14.25
 No. 1 American Scotch, per ton. ... @ 14.60
 No. 2 American Scotch, per ton. @ 13.85
 No. 1 Soft Silvery, per ton..... 15.50 @ 16.00
 Mahoning and Shenango Valley Neutral Mill Irons, per ton.... 13.25 @ 13.75
 Mahoning and Shenango Valley Red Short Mills, per ton..... 13.50 @ 14.00

The sales of Foundry Irons reported above were close upon 75,000 tons and the price was very close to \$14.75, possibly \$14.80. Outside of these sales the market was featureless. There is no such thing as a steady demand for any one kind of Iron or for a persistent demand for that. The downward tendency noted last week has been checked, but prices are still so uncertain that the quotations given out in any quarter are considered of small value. It will be noticed that quotations are even lower than they were one week ago.

Old Rails.—The market is in very bad shape, the demand being slight and the supply very large. It is given out to-day that Old Americans can be had in almost any quantity at \$18.75 @ \$19.

Nails.—The market is not particularly active, nor is it dull, with \$1.70 quoted for Steel Wire, and \$1.65 for Steel Cut Nails in stock. There is, however, a fair demand.

Scrap.—The present situation has been anticipated for a long time. Nothing worthy of record has been recorded during the past week. The demand is insignificant and dealers throw up their hands when asked for news. No. 1 Railroad, Wrought is now quoted at \$15.50 @ \$15.75 per ton; Cast Scrap at \$11 @ 11.50, and Cast Iron Borings at \$7 @ \$7.50.

Manufactured Iron.—Common Bars are in more favor and are quoted to-day at 1.70¢ @ 1.75¢, with fair demand and a good outlook for the future.

Barb Wire.—There is still a very good demand. Prices are unchanged and manufacturers look for even better business because of the closing down of Eastern concerns.

Philadelphia.

Office of *The Iron Age*, 230 South Fourth St.,
 PHILADELPHIA, Pa., August 2, 1892.

The eighth month of the year opens somewhat favorably in a business point of view, and, as a rule, prices are beginning to show some signs of stiffening. It must be admitted, however, that this result has been attained in a way somewhat out of the usual course, but so long as the reaction is genuine, it is not worth while to find fault with the why or the wherefore. The general impression seems to be that business is in a sound, healthy condition; that the decline in prices has been checked, and that the production has been adjusted pretty nearly to what are likely to be current requirements. Two or three other features are also of an encouraging character, and while not so far advanced as to be absolutely settled, they are so near to it as to warrant the assumption that they are practically out of the way. The first of these is the contest between capital and labor. We would not for a moment wish it to be understood that we have no sympathy with labor, although it would be impossible for any intelligent or fair-minded person to tolerate such outrages as have recently been perpetrated in Allegheny County, but all the same it is reasonably certain that the victory is not with the Amalgamated Association. This contest has been foreseen for quite a while, and for some months past has had a depressing influence. The trade now regard the matter as virtually

decided. That is to say, mill owners and capitalists will be able to control their own property. It is a most extraordinary thing that such a statement should be necessary, or that such claims should need to be enforced by an appeal to military force; but everybody knows that it has been necessary, and that the claim is vindicated. This is a good thing for the market in more ways than one. The supremacy of the law having been established, produces a better feeling everywhere. Stocks having been worked down to a very low point makes a good demand, and a good demand makes better prices. It is true that somebody will lose a great deal of money by the month or six weeks of enforced idleness, and equally true that somebody else will benefit by it. It is also extremely probable that it will take the entire balance of the year to catch up, and that prices will average considerably higher than they would have done had there been no difficulty of this kind. The important fact is that there has not been enough business to keep all the mills busy. Somebody would have had to cut down their output, but, as usual, the workman that suffers is the one most determined to take the management of the mill into his own hands. If there was plenty of business around, neither the Carnegie Steel Company nor any other company would have any difficulty with their men, but there is no company strong enough to create a demand that does not exist. The best—or the worst—they can do to get business is to cut under somebody else, but they are all at the same game, so that in the long run the problem of oversupply still confronts them, no matter how low prices may be. It is no wonder that in emergencies of this kind manufacturers look closely into the question of cost and demand adjustments which appear to be entirely reasonable. As a matter of fact, however, cheapening cost is no help to the market, but past experience shows that indirectly it frequently turns it, as it is likely to do in this case. There comes a time when labor resists a reduction in wages. Then comes a curtailment of production, then a scarcity of material, then better prices. The important factor is the curtailment of production. Precisely the same end could be reached by a voluntary curtailment, but as nobody volunteers to stop for the good of the trade, it invariably comes either from a strike, or from absolute exhaustion of capital. These disagreeable features, however, are probably disposed of for the present, and while there is nothing to indicate any specially active movement in business the tendency, as we said before, bids fair to be toward improvement, both in price and demand.

Muck Bars.—Stocks are in few hands, and held at \$24.75 @ \$25, f.o.b. cars mills, with no immediate prospect of lower figures being quoted. There is some inquiry, but buyers are not fully prepared to pay the advance asked, which is fully \$1 per ton.

Pig Iron.—The encouraging feature in this department is that prices are no worse. Considering the very heavy shrinkage in consumption during the past 30 days, it is remarkable how well prices have been maintained. It may have been due to the fact that there was no disposition to take large lots, seeing which sellers contented themselves by taking whatever business was offered them without crowding to an extent which would probably result in lower prices without any corresponding increase in the volume of business. With a pretty general resumption of work at many of the rolling mills there ought to be a better demand from this time forward, and although stocks are too large to permit of any appreciable improvement in prices, steadiness and firmness at the low figures now ruling would seem to be the natural

outcome. Meanwhile supplies are liberal at about last week's figures, which for tidewater deliveries are as follows, with the usual concessions on Southern Irons at Harrisburg and Baltimore, or equivalent points:

American Scotch, No. 1x.....	\$17.00 @ \$17.50
American Scotch, No. 2x.....	16.00 @ 16.50
Standard Penna. (Lake Ore), No. 1x.....	15.00 @ 15.50
Standard Penna. (Lake Ore), No. 2x.....	14.00 @ 14.50
Standard Penna. (Lake Ore), No. 2 plain.....	13.25 @ 13.50
Medium Quality, No. 1x.....	14.25 @ 14.50
Medium Quality, No. 2x.....	13.25 @ 13.75
Standard Virginia, No. 1x.....	14.25 @ 15.00
Standard Virginia, No. 2x.....	13.75 @ 14.25
Medium Va. and Southern, No. 1x.....	14.25 @ 14.50
Medium Va. and Southern, No. 2x.....	13.00 @ 13.50
Standard Penna. and Virginia Forge.....	13.00 @ 13.50
Ordinary Forge.....	12.50 @ 13.00
Hot-Blast Charcoal.....	18.50 @ 21.00
Cold-Blast Charcoal.....	24.00 @ 26.00

Steel Billets.—The market is irregular, but on the whole prices are hardly as firm as they were a week ago. For immediate deliveries buyers would probably have to pay \$25.50 and upward Schuylkill Valley, but for September and later lower rates would be named on the chance of securing a good sized order. But there is no disposition to buy largely, as there is an impression that the supply will be quite large in course of a few weeks' time. Mills are pretty well sold up for the present, and are therefore not pushing business with much urgency, although somewhat anxious to secure firm orders, so that they may have something to come and go on. Sales today at \$25.75 for immediate delivery, and offered at \$25 for September and later.

Steel Rails.—The demand is of the same limited character as noted for a long time past, but mills have a good deal of work in hand, as they are nearly all engaged on specialties outside of the Rail department. Sales at \$30, f.o.b. cars, which is the uniform quotation at Eastern mills.

Bar Iron.—There is an active demand for Bars, and mills are all crowded with orders for early delivery. Prices vary according to the amount of work in hand. Some quote 1.75¢ @ 1.80¢ at mills, while others accept 1.70¢ for such quantities and such deliveries as they can conveniently handle. The impression is that the extreme prices will not be maintained for any length of time, although for the time being there is considerable scarcity. Store price for bars 1.9¢.

Plates.—A very active business is being done, and mills have now pretty much all the work they can handle. Prices are steady and firm, but not notably higher than last week, as manufacturers have no desire to establish figures which cannot be maintained. Temporarily it is probable that consumers might be squeezed a dollar or two per ton, but with so many mills on the point of starting up it is hardly likely that current quotations will be maintained for any length of time, neither is it likely that they will recede to the low figures ruling during the first half of the year. Meanwhile sales for early delivery can easily be made at about the following rates:

	Iron	Steel
Tank Plates.....	1.90 @ 1.95¢	1.95 @ 2.05¢
Shell.....	2.25 @ 2.35¢	
Flange.....	2.70 @ 2.90¢	2.50 @ 2.60¢
Fire Box.....	3.00 @ 4.00¢	2.70 @ 2.80¢
Special qualities.....		3.25 @ 3.75¢

Structural Material.—There is a great deal of business coming in, and a great deal more in sight, so that mills in this line of work are almost certain of full employment during the balance of the year. Prices are firm and orders easily secured at about the following quotations: Bridge Plates 2¢ @ 2.10¢; Angles, 1.95¢ @ 2¢; Beams, Channels or Tees, 2.30¢ @ 2.40¢, according to character of order.

Sheets.—The demand is very active, and manufacturers have no difficulty in placing their entire output, but as yet there is no general improvement in prices. Some who made exceptionally low quotations two or three months ago are getting a little more money, but as a rule best makes can be had at prices about as follows:

Best Refined, Nos. 14 to 20..... \$2.40 @ 2.60
Best Refined, Nos. 21 to 24..... \$2.90 @ 3.00
Best Refined, Nos. 25 to 26..... \$3.10 @ 3.15
Best Refined, No. 27..... \$3.30 @ 3.40
Best Refined, No. 28..... \$3.40 @ 3.50
Common, $\frac{1}{2}$ % less than the above.

Quotations given as follows are for the best Open-Hearth Steel, ordinary Bessemer being about $\frac{1}{2}$ % lower than are here named:

Best Soft Steel, Nos. 14 to 20..... \$3 @ 3 $\frac{1}{2}$
Best Soft Steel, Nos. 21 to 24..... \$3 $\frac{1}{2}$ @ 3 $\frac{1}{2}$
Best Soft Steel, Nos. 25 to 26..... \$3 $\frac{1}{2}$ @ 3 $\frac{1}{2}$
Best Soft Steel, Nos. 27 to 28..... \$3 $\frac{1}{2}$ @ 3 $\frac{1}{2}$

Best Bloom Sheets, $\frac{1}{2}$ % extra over the above prices.

Best Bloom, Galvanized, discount.... @ 70%
Common, discount..... @ 72 $\frac{1}{2}$ %

Old Material.—Owing to the continued suspension of work at many of the mills, stocks have accumulated to an extent that is very demoralizing to prices. Quotations depend very much on the necessity of the holder to realize, but the usual asking prices are about as follows, subject to 50¢ to \$1 per ton reduction in case of a forced sale. Old Iron Rails, \$19 @ \$20, delivered; Steel Rails, \$15 @ \$16, delivered; No. 1 Railroad Scrap, \$17 @ \$17.50, Philadelphia, or for deliveries at mills in the interior \$17 @ \$18, according to distance and quality; \$12 @ \$12.50 for No. 2 Light; \$12 @ \$13 for best Machinery Scrap; \$18 @ \$14 for Wrought Turnings; \$9 @ \$9.50 for Cast Borings, and nominally \$21 @ \$22 for Old Fish Plates, and \$14.50 @ \$15 for Old Car Wheels.

Wrought-Iron Pipe.—There is no change in the condition of the market for Pipe. Manufacturers are not pushing business at prices now available, which are supposed to be little if anything beyond actual cost. There are no standard quotations, prices being a matter of private arrangement between buyer and seller.

St. Louis.

Office of *The Iron Age*,
Bank of Commerce Building,
St. Louis, August 1, 1892.

Pig Iron.—The condition of the Iron trade remains practically unchanged. Prices fail to show any improvement whatever, and the volume of business is confined to carload orders, with an occasional order of from 50 to 100 tons. The market is unsettled and furnacemen continue to make low prices with the hope of influencing purchases. The demand however is of such a character that the offer of lower prices seems useless, and consumers continue to purchase from hand to mouth, as their needs require. Under these conditions it is difficult to see any hope of immediate improvement; indeed, if the market continues to hold its own, it will be doing very well. The situation will doubtless be strengthened, however, by the report that the Pittsburgh strike will shortly be declared off. This, together with an increased trade, which is confidently anticipated as soon as the warm weather is past, should have a benefiting influence on prices. At the moment, however, the market is in a weak and partly demoralized condition, from which it cannot be expected to recover very rapidly. For ordinary quantities we quote as follows for cash, f.o.b. St. Louis:

Southern Coke, No. 1 Foundry, \$18.75 @ \$14.00
Southern Coke, No. 2 Foundry, 13.00 @ 3.0
Southern Coke, No. 3 Foundry, 12.2 @ 12.75
Gray Forge..... 12.00 @ 12.25

Southern Charcoal, No. 1 Foundry.....	15.25 @ 15.75
Southern Charcoal, No. 2 Foundry.....	14.75 @ 15.00
Missouri Charcoal, No. 1 Foundry.....	14.00 @ 14.50
Missouri Charcoal, No. 2 Foundry.....	13.50 @ 14.00
Ohio Softeners.....	16.75 @ 17.00

Bar Iron.—The demand for Bar Iron continues to keep up, and jobbers are now busily engaged trying to avoid filling their order books too rapidly at to-day's prices. Sales to-day are made on the basis of from 1.85¢ to 1.90¢, and it is quite probable that these figures will shortly be advanced. Mills continue to have all the business they can handle, and quote 1.85¢ @ 1.70¢, half extras, f.o.b. cars East St. Louis.

Barb Wire.—Mills are enjoying a fairly active trade, considering the season. Jobbers are busy, and anticipate a heavy trade during the present month. Mills quote as follows: Painted, \$2.30; Galvanized, \$2.75; less than carloads 10¢ per hundred weight additional.

Wire Nails.—The situation in the Wire Nail trade is highly satisfactory to the mills. Stocks are light, and \$1.70 @ \$1.75 is the market, f.o.b. cars East St. Louis. The demand is strong and a slight improvement, say 5¢ @ 10¢ per keg, within the next week or two is anticipated. At the moment the prices mentioned above are the market, but at these prices mills are holding firm.

(By Telegraph.)

Pig Lead.—The movement in this metal is limited and the market has a decidedly flat appearance. Offerings are not large, but, on the other hand, the demand is not of sufficient magnitude to absorb what is offered; as the result the market presents a weak front, and is not in a position to stand much pressure. Sales are reported at \$3.50.

Spelter.—The demand for Spelter shows signs of improvement, and there is a slight advance in price to be noted. There is considerable quiet buying going on which does not find its way into print, which leads us to believe that a higher market will shortly be in order. At this moment 4.50¢ is bottom for delivery during the next 30 days. The Nail department of the Belleville Steel Company has started up, and the company advise us they are in a position to fill all orders promptly.

Detroit.

WILLIAM F. JARVIS & Co. of Detroit, Mich., under date of August 1, 1892, write: No very great activity is to be expected at this season of the year, and the usual midsummer dullness is being experienced. While an occasional round lot is disposed of, this is the exception, sales for prompt shipment being the rule. Prices remain the same, a few offers for Southern Irons at a concession having been refused by the furnaces. Buyers, as well as sellers, appear to be satisfied to wait, and both feel confident that no money will be lost by waiting. Time alone will show which has read the future correctly. In the meantime, we can only report a dull and lifeless market with no change in prices. We quote as follows:

Lake Superior Charcoal, all numbers.....	\$16.50 @ \$17.50
Lake Superior Coke, Bessemer.....	16.00 @ 16.50
Lake Superior Coke Foundry, all ore.....	16.00 @ 17.00
Standard Ohio Blackband (40 per cent).....	16.50 @ 17.00
Southern No. 1.....	15.0 @ 15.50
Southern Gray Forge.....	18.25 @ 18.50
Jackson County (Ohio) Silvery.....	17.75 @ 18.25

Louisville.

LOUISVILLE, KY., July 30, 1892.

The market is dull, with little buying of Iron save on the part of car companies. The demand for Iron for pipe works has fallen off considerably and they report few contracts in sight for Pipe, and most companies are not running full capacity. Stove men are largely idle and report business exceedingly dull. The low prices that have existed for some time, buyers report, are now being offered for delivery running into the first months of next year. Car Wheel Iron is in some demand and prices are holding their own. The extreme low prices of Coke Iron made last week, it is now known, were made by furnaces whose selling is not a criterion of the market. Most of the leading companies are selling for delivery this year at basis of \$8.50 for Gray Forge, Birmingham, and prices are firm on this basis. We quote for cash, f.o.b. cars, Louisville:

Southern Coke, No. 1 Foundry.....	\$13.25 @ \$13.50
Southern Coke, No. 2 Foundry.....	12.25 @ 12.50
Southern Coke, No. 3 Foundry.....	11.50 @ 12.00
Southern Coke, Gray Forge.....	11.00 @ 11.50
Southern Charcoal, No. 1 Foundry.....	15.00 @ 16.00
Southern Car Wheel.....	17.50 @ 19.00

Cincinnati.

(By Telegraph.)

Office of *The Iron Age*, Fourth and Main Sts., CINCINNATI, August 3, 1892.

The extreme heat the first half of the week was detrimental to the Pig Iron trade, causing many of the mills to suspend operations, but during the last few days there has been a fair demand for Gray Forge and Mottled Iron, with sales in lots of 500 to 200 tons for delivery during the remainder of the year. This, with the usual run of orders for immediate consumption, make the volume of business of fair proportions, although there is no very large trading. The tone of the market may be called firm, as there have been bids at concessions which were refused. There is no demand for Charcoal Car Wheel Iron. In fact, there have been applications to postpone deliveries on contracts, but the Car shops are buying to a fair extent of Coke Iron. The troubles at Homestead have caused an increased demand in this district for Finished Iron and Steel, and to some extent this reflects upon the market for crude Iron, although no advance in prices is yet in sight. In revising quotations two weeks ago we reported a decline of 25¢ per ton on leading Southern Irons. By some mistake the quotation on No. 3 Foundry was reduced 75¢, which was obviously wrong. That grade of Iron is not in excessive supply. Quotations are as follows:

Foundry.

Southern Coke, No. 1.....	\$13.25 @ \$13.50
Southern Coke, No. 2.....	12.25 @ 12.50
Southern Coke, No. 3.....	11.75 @ 12.00
Ohio Soft Stone Coal, No. 1.....	16.00 @ 16.50
Ohio Soft Stone Coal, No. 2.....	15.10 @ 15.50
Maboning and Shenango Valley.....	16.60 @ 17.25
Hanging Rock Charcoal, No. 1.....	19.75 @ 20.00
Hanging Rock Charcoal, No. 2.....	19.00 @ 19.50
Fennessee and Alabama Charcoal, No. 1.....	16.50 @ 17.00
Fennessee and Alabama Charcoal, No. 2.....	15.50 @ 16.00

Forge.

Gray Forge.....	11.25 @ 11.75
Mottled Neutral Coke.....	10.75 @ 11.25

Car Wheel and Malleable Irons.

Standard Southern Car Wheel.....	18.75 @ 19.00
Lake Superior Car Wheel and Malleable.....	17.75 @ 18.00

The Shenango Steel Company's mill, at New Castle, Pa., is fast nearing completion, and Superintendent Stevenson expects the plant to be ready for operation by October 1. It is among the largest steel mills of the country, being brought into existence by the New Castle Wire Nail Works and Rod Mill, as a necessity of their growth and prosperity.

New York.

Office of *The Iron Age*, 96-102 Reade street,
NEW YORK, August 3, 1892.

Pig Iron.—No new features of any consequence have developed during the past week. We quote Northern brands at \$15 @ \$15.50 for No. 1; \$14 @ \$14.50 for No. 2; \$13.25 @ \$13.50 for Gray Forge, tidewater. Southern Iron, same delivery, \$14.25 @ \$15 for No. 1; \$13.50 @ \$14.50 for No. 2 and No. 1 Soft; \$13 @ \$13.50 for No. 2 Soft; \$12.50 @ \$13 for Gray Forge.

Spiegeleisen and Ferromanganese.—The market is lifeless. We quote foreign Ferro., 80%, at \$58 @ \$59, which may be shaded, particularly to meet domestic West of the Allegheny Mountains.

Billets and Rods.—There is some inquiry for foreign Basic Billets, and there is an inquiry in the market for 500 tons of Rail Blooms for the Pacific Coast. In Wire Rods we note a sale of 500 tons domestic at tide-water at a shade under \$34. We quote foreign Billets, nominally \$32 @ \$32.50, and American Rods \$34 @ \$34.50, tide-water.

Steel Rails.—The Eastern market remains absolutely featureless. It is reported that a lot of about 3000 tons of rusty Rails, long in store, had been sold at \$24. We quote \$30 at Eastern mill.

Manufactured Iron and Steel.—Local mills are full of work diverted to them from distant markets, but there are very few new contracts coming up in this market. In some cases all the figures are in, but buyers decline to close until the present labor troubles in the building trade are settled. So far as the mills are concerned, the latter are not embarrassing, since they allow of taking care of more remunerative work from other sections. We quote. Beams, 2.40¢ @ 2.75¢ for small lots and 2.20¢ @ 2.50¢ for round lots, according to sizes; Angles, 1.85¢ @ 2¢; Sheared Plates, 1.9¢ @ 2.25¢; Tees, 2.30¢ @ 2.75¢; Channels, 2.25¢ @ 2.50¢, on dock. Car Truck Channels, 2¢ @ 2.10¢. Steel Plates are 1.85¢ @ 1.9¢ for Tank; 2.20¢ @ 2.25¢ for Shell; 2.50¢ @ 2.65¢ for Flange; 2.6¢ @ 2.75¢ for Marine, and 3¢ @ 3.25¢ for Fire Box, on dock; Refined Bars are 1.7¢ @ 1.9¢, on dock; Common, 1.6¢ @ 1.65¢. Scrap Axles are quotable at 2¢ @ 2.10¢, delivered. Steel Axles, 2¢ @ 2.1¢, and Links and Pins, 2¢ @ 2.20¢; Steel Hoops, 1.90¢ @ 2¢; Cotton Ties, 85¢ per bundle, delivered.

Merchant Steel.—We quote Machinery, 1.80¢ @ 1.85¢; Tire, 1.85¢ @ 2¢; Toe Calk, 2.20¢ @ 2.30¢, and Sleigh Shoe, 1.75¢ @ 1.80¢, delivered.

Track Material.—We quote Spikes, 1.90¢ @ 2¢; Fish Plates, 1.60¢ @ 1.65¢; Track Bolts, square nuts, 2.50¢ @ 2.60¢, and hexagon nuts, 2.70¢ @ 2.80¢, delivered.

Old Material.—Old Steel Rails have sold at \$13.50, at which price they are also offered in the interior.

Stock Warrants.—The American Pig Iron Storage Warrant Company report as follows:

	Tons.
Stock in yard June 30, 1892.....	72,900
Put in yard for 31 days ending June 31, 1892.....	12,100
Total.....	85,000
Withdrawn 31 days ending July 31, 1892.....	1,300
Net stock in yard July 31, 1892.....	83,700

Of the four blast furnaces of New Castle, Pa., two are in operation—the Red Jacket and the Etna. The Raney & Berger furnace is undergoing extensive repairs. It will manufacture pig metal for the Shenango Steel Mill when it again resumes operations.

Metal Market.

Copper.—Since the purchases referred to last week there has been very little business in Lake Superior Ingots. Consumers take small quantities only on individual orders and appear content with that policy in the absence of any special attraction for deviating therefrom. Producers are quite as conservative in offering supplies, and, for the moment, outside holdings are not of a sufficient volume to have any pronounced bearing. Hence a fairly steady though quiet market, with 11½¢ the general quotation. Arizona Ingots is valued at about 11½¢, but sells slowly. On Common Casting brands there is some irregularity, with the range of 10½¢ @ 11¢ quoted, and business moderate.

Pig Tin.—The speculative interest that depressed prices last week has turned about on the other tack and sent values rapidly upward. At from 20¢ up to 21¢ transactions involving 200 to 250 tons took place, but on the subsequent rise to 21.15¢, comparatively little business was done. The manipulations, in fact, served to restrict speculation instead of inviting it, since the movements of prices were hardly in harmony with statistics of supply and demand. Purchases for trade account and consumption seem to be of about usual volume for the season, but checked to some extent by the violent fluctuation in prices. Straits shipments last month, as reported on the Metal Exchange, were 2700 tons to Great Britain and America and 100 tons to the Continent, against a total of 2500 tons during June. Visible supply in Europe and America August 1 was reported as being 14,100 tons, against 12,848 tons July 1. Of Tin spot and afloat England is shown to have 5620 tons, against 4278 tons a month ago. America is credited with 5300 tons, against 5650 tons on July 1, while Holland is put down for 3270 tons, against 2920 tons. Wednesday's market showed some response to the statistical exhibit, prices having eased off 0.15¢ from the highest point of the week.

Pig Lead.—Early in the week holders offered indifferently and made some display of firmness, but subsequently more disposition to sell was manifested, and about 300 to 400 tons were let go at 4.10¢ here for August and September shipment. Single carloads for prompt delivery meanwhile realized 4½¢ @ 4.15¢ to a moderate extent. In the general situation there is nothing that contrasts in any remarkable degree with conditions that have existed for some time past. There is evidently enough Lead to go around, certainly an indifferent spirit manifested by consumers and no sign of tendency toward speculative venture.

Spelter.—Eastern consumers are still very indifferent buyers and from other sources no demand is experienced at present. Smelters do not seek orders in a manner suggestive of anxiety to sell, but the offering is nevertheless a little freer and the tone of the market softer. On prime Western for early shipment 4.70¢ is a common quotation and for some that do not enjoy as good reputation 4.65¢ would doubtless be accepted.

Antimony.—The business passing is of routine character and the market remains easy at 10½¢ @ 10¾¢ for Hallett's, 12½¢ for L. X. and 13½¢ for Cookson's.

Tin Plate.—The market has remained positively dull. Outside of direct purchases by meat and oil carriers there is not a fair summer season trade. Future shipments are almost neglected and spot goods are rarely taken in other than retail quantities. Prices firm for Ternes, but otherwise irregular and rather weak. We quote as follows for full weights: Coke Tins—

Penland grade, IC, 14 x 20, \$5.25; J. B. grade, do., \$5.35; Bessemer do., \$5.25; light weights, 100-lb, 10¢ less; 95-lb, 20¢ less; 90-lb, 30¢ less than full weight; Siemens Steel, \$5.35. Stamping Plates—Bessemer Steel, Coke finish, IC basis, \$5.60 @ \$5.65; Siemens Steel, IC basis, \$5.75 @ \$5.80; IX basis, \$6.80. IC Charcoals—Melyn grade, 1 X, \$6.40; for each additional X add \$1.50; Allaway grade, \$5.75; Grange grade, \$5.85; for each additional X add \$1.20. Charcoal Ternes—Worcester, 14 x 20, \$5.75; do., 20 x 28, \$11.50; M. F., 14 x 20, scarce; do., 20 x 28, scarce; Dean, 14 x 20, \$5.45; do., 20 x 28, \$10.80; D. R. D. grade, 14 x 20, \$5.35; do., 20 x 28, \$10.40 @ \$10.45; Mansel, 14 x 20, \$5.30; do., 20 x 28, \$10.45; Alyn, 14 x 20, \$5.45; do., 20 x 28, \$10.65; Dyffryn, 14 x 20, \$5.65; do., 20 x 28, \$11. Wasters—S. T. P. grade, 14 x 20, scarce; do., 20 x 28, \$10; Abercarne grade, 14 x 20, scarce; do., 20 x 28, \$9.80.

Coal Market.

The Anthracite Coal trade is dull, no Coal having been sold at the latest advance. To indicate prices it is necessary to quote the July circular and take off about 25¢ a ton to allow for shading by outsiders, those not in the combine. The latter maintain a firm front, believing, or, at least, professing to believe, that their position is impregnable, and that in course of time consumers must meet their views. The main difficulty in carrying out their scheme is the quantity of Coal afloat bought at June prices, which the market is slow to absorb, causing a sort of congestion. Therefore talk of an advance at the opening of August was premature and ill-advised, but it is said that miners are instructed to keep the output rigidly within the 3,000,000 ton limit prescribed for August, in order that a further advance may take place in September. To the outside observer the limit referred to appears very liberal, especially if the estimate is correct that scarcely half of the 3,000,000-ton allowance will pass into actual consumption during the month. The independents are selling Chestnut for about \$3.90 @ \$4.10; Stove, \$4.15 @ \$4.25, f.o.b. Philadelphia parties represent that the refusal of an injunction against the Lehigh Valley Railroad, applied for in a case at Easton, stiffens the market.

The official statistics of production for the week ending July 23 make the total 854,061 tons, an increase over the same week in 1891 of 18,000 tons. Total for the year 22,082,000 tons, an increase over the same time last year of 1,144,000 tons.

No. 2 colliery of the Delaware & Hudson Company at Carbondale is the scene of a big fire, so that flooding may be necessary. A mile of Coal is burning along the main gangway.

The mining employees of the Philadelphia & Reading Coal and Iron Company, for the first time in three years, will be paid at the full \$2.50 basis rate for the last two weeks of July and the first half of August. The rate is based on the selling price of Coal, wages fluctuating accordingly.

A Shamokin dispatch says: "The movement among the colliery operatives to organize a union similar in general features to the old, disrupted, but once very powerful, Miners' and Laborers' Benevolent Association, occasions much attention throughout the entire Anthracite Coal mining country. Between 70,000 and 80,000 mine workers are interested, but they have not recovered from their defeat in the Reading Railroad contest some years ago, and are not supposed to be prepared for another struggle."

One of the largest Coal deals in the history of Allegheny County is the lease of a tract of Coal land, about 2 miles long and 1 mile wide, for 20 years by the heirs of John Taggart to George M. Merritt. The new company expect to mine more than 240,000 tons of Coal a year for lake shipment.

Financial.

The promising condition of the crops continues to be a prominent factor in business considerations, corn especially having benefited incalculably from the protracted hot weather. The first bale of new Georgia cotton was received in Savannah 1st inst., selling at 10¢ per lb, and a lot of new crop rice was received in New Orleans. The cutting of winter wheat has been finished through a large section of the country, and the spring wheat harvest has commenced, but farmers are in no haste to push grain to market at the prevailing low prices. The oat harvest in Illinois has just begun. An unexpected shipment of over \$4,000,000 in gold was met by no obstacles placed in the way by Treasury officials, no allusion being made to a substitution of silver for Treasury notes. Nevertheless the movement was sufficient to direct attention to an evident feeling of uneasiness in Europe respecting the financial future of the United States, and this regardless of the shelving of the silver bill. The two financial weeklies in London give much prominence to the subject, which fact alone would tend to impair the confidence of investors, but it appears from the tenor of the journals referred to that both authorities assumed too much. But in any view the fact remains that under existing laws the Government must eventually sell bonds for gold or invade the \$100,000,000 gold reserve, either of which alternatives should be averted by timely preventive action.

The stock market was generally strong, the coalers and grangers keeping the lead. Sugar refiners' was influenced by an advance in the price of refined sugar, and Reading derived strength that an application for an injunction against the Lehigh Valley had been denied. Atchison, Topeka & Santa Fé advanced on buying for Boston and European account. The grangers felt the influence of reports from the West showing a rapid growth of corn as the result of hot weather, and there was also a free movement of wheat to market. Disappointment was felt that the adjournment of Congress was deferred, but it was reported that the Anti-Option bill would not pass. One feature of the week was an advance in Minneapolis & St. Louis common and preferred on a report that the road will soon be taken out of the hands of the receiver. The case which was decided in Reading's favor is what is known as the Gummere application for an injunction against the Reading's lease of the Lehigh Valley. A motion for a receiver for the Lehigh Valley was included in this suit.

United States bonds were steady at the following quotations:

U. S. 4½%, 1891, extended.....	100
U. S. 4%, 1897, registered.....	116½
U. S. 4%, 1897, coupon.....	116½
U. S. currency 6¢	106½

Time money was plentiful, but its demand was light. Rates 2% for 30 days, 2½% for 60 days, 3% for 90 days to 4 months, 3½ @ 4% for 5 to 6 months. Mercantile paper is unchanged in features. The demand is excellent from all quarters, while the supply is fair. Indorsed bills receivable at 3½%, other grades and dates 4 @ 5%. New York banks reduced the rates of interest on deposits of city money from 2½ to 2%. The bank statement showed a gain of \$2,481,600 in cash and

of \$1,167,475 in surplus reserve, making this item \$24,281,275. This statement did not reflect the withdrawal of about \$4,000,000 legal tenders taken out of the banks to exchange for gold sent to Europe and Canada on Saturday. Respecting money available for crop purposes, a Chicago banker writes that the West and Northwest is now better supplied than ever before, and is fast becoming independent in this respect.

Sterling exchange is not so firm, bills being in better supply.

The general markets have a somewhat better tone. At the close of the week wheat is improved, after a previous decline, and the market is steadier, exporters taking hold with more freedom. New flour has thus far come forward sparingly. Corn was more active and firm. Coffee was weak. Cotton irregular, on account of almost universally favorable weather reports. Sugars show a wider margin between the raw and refined. Goods are billed at the higher figures to wholesale grocers who have an understanding with the Trust, and ½¢ drawback is allowed on a sworn statement that they have not undersold during the month.

The following is an abstract of Judge Schuyler's decision in the Reading-Lehigh Valley case on Monday: "A preliminary injunction cannot be used to take property from one person and put it into possession of another. Such injunction cannot be granted. It would do the plaintiff no good and would work injury to the defendant. Such injunction would only be granted in a clear case of right and where no doubt exists as to the right of plaintiff. On a motion for such injunction the Court will not undertake to decide doubtful or difficult questions of law or disputed questions of fact. The danger of 'irreparable injury' is an indispensable prerequisite to the granting of a preliminary injunction. An irreparable injury is not a commission the danger of which ought, on principles recognized by the court of equity, to be restrained."

British Iron and Metal Markets.

[Special Cable Dispatch to The Iron Age.]
LONDON, WEDNESDAY, August 3, 1892.

Scotch warrants have declined about 5 pence from the highest point reached last week. The speculation that developed at that time was followed by realizations that offset the influence of better trade demand. Cleveland warrants dropped even more, having touched 38/6 and were traded in sparingly at the decline. Hematites eased off 6 pence on moderate dealings. Connal's stocks show a further decrease and now include 411,000 tons Scotch and 23,000 tons Cleveland. Latest quotations on warrants were 41/11 for Scotch, 38/6 for Cleveland and 50/ for Hematite.

Pig Tin has advanced sharply under renewed speculative buying. Purchases on American account are again referred to as instrumental in causing the rise. In this market outsiders manifest but little active interest. Straits shipments last month were 2805 tons.

Copper has been rather weak, owing to lack of support from large operators and absence of outside orders. Transactions have been mostly of a holiday character. Sales have been made of 4500 tons Anaconda Matte for delivery September to January. Terms not made public. European spot stocks have increased 2934

tons during the past month. Chili charters were 2200 tons.

There is nothing new in the Tin-Plate situation. Dealings continue light and are chiefly for Russian and 'Frisco.

Scotch Pig Iron.—Business in Makers Iron moderate, but the market is steady with slightly higher prices for some brands.

No. 1 Coltness,	f.o.b. Glasgow.....	53/6
No. 1 Summerlee,	" "	52/
No. 1 Gartsherrie,	" "	51/6
No. 1 Langloan,	" "	52/4
No. 1 Carnbroe,	" "	44/6
No. 1 Shotts	at Leith.....	51/6
No. 1 Glengarnock,	Ardrossan.....	50/
No. 1 Dalmellington,	" "	47/
No. 1 Eglinton,	" "	46/6
	Steamer freights, Glasgow to New York, 1/ Liverpool to New York, 7/6.	

Cleveland Pig.—Trade continues slow and the market is rather weak, with sellers at 39/ for No. 3 Middlesborough, f.o.b.

Bessemer Pig.—There has been a fairly active demand and the market is quite firm at 51/ for West Coast brands, Nos. 1, 2 and 3, f.o.b. shipping port.

Spiegeleisen.—Market remains very quiet and unchanged. English 20¢ quoted at 77/6, f.o.b. shipping port.

Steel Rails.—Demand is rather more active and makers hold for higher prices. Heavy sections quoted at £4. 5/ @ £4.7/6, f.o.b. shipping port.

Steel Billets.—No changes in this line. Business still moderate. Bessemer, 2½ x 2½ inches, quoted at £4.5/, f.o.b. shipping point.

Steel Blooms.—A slow market, with former prices unchanged. Makers quote £4 for 7 x 7, f.o.b. shipping point.

Steel Slabs.—Little doing and makers' prices without change. Bessemer quoted at £4.5/, f.o.b. at shipping point.

Old Iron Rails.—No further change in prices and demand moderate. Tees quoted at £2. 17/6 and Double Heads at £3, f.o.b.

Scrap Iron.—The market remains quiet and unchanged. Heavy Wrought Iron quoted at £2. 7/6 @ £2. 10/, f.o.b.

Crop Ends.—Sales light and at about former prices. Bessemer quoted at £2. 12/6 @ £2. 15/, f.o.b.

Manufactured Iron.—Buyers operate cautiously and at about former prices. We quote, f.o.b. Liverpool:

	£ s. d.	£ s. d.
Staff. Ordinary Marked Bars	8 10 0	8
" Common "	6 5 0	6 7 6
Staff. Blk Sheet, singles....	7 5 0	6
Welsh Bars (f.o.b. Wales)....	5 7 6	6

Tin Plate.—No change in the situation at the close. We quote, f.o.b. Liverpool:

IC Charcoal, Alloway grade	14/3 @ 14/9
IC Bessemer Steel, Coke finish....	12/3 @ 12/6
IC Siemens " " "	12/6 @ 12/9
IC Coke, B. V. grade 14 x 20.....	12/3
Charcoal Terne, Dean grade.....	12/ @ 12/3

Pig Tin.—Market closed unsettled. Straits quoted at £96 for spot, and £95. 10/ for three months' futures.

Copper.—Barely steady and quiet market at the close. Merchant Bars quoted at £44. 12/6, spot, and £45. 2/6, three months' futures. Best selected, £48. 15/.

Lead.—The market has been quiet, but prices are steady at £10. 7/6 for Soft Spanish.

Spelter.—Demand is fair and the market steady at £21. 10/ for ordinary Silesian.

HARDWARE.

Condition of Trade.

NOTWITHSTANDING the fact that July is recognized as probably the dullest month in the year, a retrospect of its business shows a volume in excess of last year. August opens with the prospect of a gradual increase in the demand, which will introduce what it is hoped will be a satisfactory and profitable season. The general conditions prevailing throughout the country are certainly favorable to business activity, prosperity being the rule in nearly all sections. Large crops also are regarded as assured, and the marketing of these products will put, it is expected, a large amount of money in circulation. From the South, in which the condition of things for the past year has not been especially satisfactory, the reports are much more encouraging. There is little change in the matter of prices, the tone of the market remaining as heretofore, with perhaps a slight improvement in some staple lines, owing to special influences. Prices as a rule are very low, and merchants and manufacturers have to content themselves with narrow margins of profit. Stocks of goods throughout the country are regarded as small, as the trade for a good many months have been purchasing conservatively, being careful to avoid an accumulation of stocks on a market devoid of strength, with a tendency downward rather than upward. The unsettled condition of labor matters is felt, as manufacturers are unwilling to quote for future delivery or to accept orders at present prices where there is any doubt as to their ability to fill them, owing to possible strikes or difficulty in obtaining the raw material. Collections are good.

Chicago.

(By Telegraph.)

The volume of business in Hardware is not merely better than usually expected at this time of the year, but is unquestionably large. The hot weather of July quickened the demand very decidedly, the increased business being more noticeable with the diminished force at work during vacation season. All kinds of goods peculiar to the season are in demand. Building activity in country towns is, of course, the cause of the good demand for Builders' Hardware. Farmers are now too busy with their crops to undertake improvements. Trade from them will come later and will be much larger than usual from present appearances. The news from Kansas, Nebraska, Minnesota and South Dakota is most cheering.

Crops are so heavy in the last named State that a correspondent says the farmers will this winter be able to wear diamonds. Jobbers are of the opinion that stocks of goods are so small in merchants' hands and in factory warehouses that they will have more trouble this fall to get goods than to sell them. The Stove houses here report a much larger business in progress than last year at this time. The only cause of complaint is the narrow margins now realized on the merchandise handled. The larger volume of business merely nets about the same result as the smaller volume a few years since when profits were better.

St. Louis.

(By Telegraph.)

A lull is now being experienced by Hardware jobbers. The farmers are making their preparations to commence harvesting and country Hardware dealers are beginning to feel the dullness. Prices do not vary very much. In some lines they are tending upward, particularly in Manufactured Iron, and jobbers have hard work to keep their stocks in good shape. Wire Nails are in fair demand and prices are firm. Cut Nails are also being sought after to some extent. In this connection we might say that the Nail department of the Belleville Steel Company has started up and they are now in a position to fill all orders promptly. The general outlook is encouraging and a large fall trade will no doubt result. Collections are good.

San Francisco.

HUNTINGTON-HOPKINS COMPANY.—Collections continue to improve a little out of proportion to trade in general, which remains about the same. The northern central portion of our State suffered quite severely in the loss of grain, a heavy north wind cutting off the ripened heads to such an extent that in many localities there will not be over half a crop. The fruit raisers are watching with eager interest the result of a recent shipment of fresh fruit in cold storage to Europe, which, if successful, will open up a new market for our State products. Local trade is quite dull, particularly in the Builders' Hardware line.

There is a prospect of a stiffening up in Wrought-Iron Pipe on account of the manufacturers advancing their list on a few sizes. We need just such advances, as this article has been sold at little or no profit for some time. The local Cordage Company have reduced their card three times since the 14th inst., effectually shutting out importations, which we believe had been attempted by some dealers. The base on Rope now stands, Sisal or Duplex 9½ cents, and Pure Manila 12 cents. Clipper freights have had their effect on the Barb Wire market, and there has been a decided reduction.

The Washburn & Moen Mfg. Company, who have held their product at an advance

over other markets, now claim a share of the business at equal rates.

Philadelphia.

SUPPLEE HARDWARE COMPANY.—During the last week we have had the mid-summer heat to an extent hardly ever before equaled in this location. Our city has not been an exception to the high temperature that prevailed over the entire country. This extreme heat naturally had a depressing effect upon both man and boy, as well as upon trade. Fortunately this week opens with lowered temperature, and both rain and breezes have favored us, and their cooling effects are likely to again stimulate trade. The July trade, notwithstanding the extreme heat, has been quite equal to that of one year ago, and the signs of the times are encouraging. We enter upon the fall trade with fewer failures for the first half of the year than we had during the first half of 1891 and with an excess in volume of trade for the first half of the year, and with exports for the same time largely in excess of 1891. We also enter upon the fall trade with stocks of goods in hands of country merchants below the usual average, and with a likely increased demand. Therefore, everything appears favorable. Prices are steady and manufacturers, as a rule, are quite busy. The fact that the wheat, cotton and corn crops appear to be assured, coupled with the fact that the foreign demand is likely to be great and possibly equal to that of the year ending July 1, 1892, should be fully appreciated by our country. The farmers, skilled mechanics, and indeed all those who sincerely desire work, have no difficulty in obtaining it, and are paid for the same a sum unequaled in any other country. Locations that are affected by the unfortunate strikes naturally feel their chilling effects, and all hope for a speedy settlement.

Baltimore.

CARLIN & FULTON.—In this market July is never responsible for any large portion of the year's sales, though the month just ended has probably kept even with the record of a year ago, notwithstanding weather hot enough to paralyze the energies of even a salamander. The absence of so many from the city upon summer vacations and the temporary change of residence by so large a portion of our population has an undoubted effect locally upon general retail business, but should be correspondingly of advantage to the suburban towns, though, of course, this does not interfere with building operations and corporation work. It is too early as yet to expect out-of-town buyers to visit our markets for fall stocks, and the farming community throughout the grain sections is too busy with the crops to give the village storekeeper much patronage and thereby encourage the traveling salesman. We hear, however, that as the wheat crop

has been very satisfactory, and other crops have been generally good, we may expect a little later a more active demand for goods. In the cotton States there seems to be a much more hopeful feeling for better times than have prevailed during the past year. With a diminished area in cotton, and a necessarily lessened crop, raised at a less cost than ever before, and with a better market price than ruled last year, and, better than all, with a generally decreased indebtedness, the result of economy and conservative buying, we have reason to look forward to a good, healthy business from that section, beginning at an early day.

New Orleans.

A. BALDWIN & Co.—Business is settling down to a steady improvement. Orders are coming in freely. The demand for Heavy Hardware, especially for Bar Iron, is beginning to have a telling effect on the stocks. Wire Nails are firmer in price and there is a decided improvement in the demand. Our planters in Louisiana are about getting ready to harvest their rice crop, which they anticipate to be the finest and largest they have ever had. The effect of this fine crop will be felt in the New Orleans business in the next 30 to 60 days.

Cleveland.

THE W. BINGHAM COMPANY.—Business for July has proved to be unusually good, and all returns indicate a healthy condition of the trade throughout our section, which augurs well for fall. Many of our men are still away on their vacations, and the increase in our Nail department business keeps every one in the house on the *qui vive*. The demand for Barbed Wire has suffered the usual decrease at this season. The Nail market is considerably firmer. Collections are good.

St. Paul.

FARWELL, OZMUN, KIRK & Co.—We have about the same condition of things now to report as in our last. The weather was quite hot for a few days, but not to so excessive a degree as generally elsewhere throughout the country; at the same time, it was too hot for comfort, and if it had continued with increased intensity heavy damage to the crops would undoubtedly have followed. However, this was checked in time, and there was little damage done. The rains that followed were probably the most violent that have been experienced here for many years. They did not reach over the larger part of Minnesota and the Dakotas, but where they did reach they were of the nature of a deluge. Considerable damage was done to the crops in a few counties through the blowing down of the grain by the wind and rain together, but the larger part of the Northwest is not affected by it, and the parts that are affected are generally not so to a very serious extent. The conditions of the weather are now very favorable for the crop, and we have reason now to expect that it will be quite satisfactory. The cutting of wheat will begin in a little more than two weeks; rye and barley

harvest is now on. The winter wheat has been cut, but there is never much of it raised here. Corn has been doing finely, although this is not a great corn country. Jobbing trade in all lines is satisfactory; there is no boom, but a healthy, satisfactory trade, and if the harvest should turn out nearly as favorable as it now promises throughout the Northwest, trade and collections this fall will be good. Prices are fairly well maintained, and there is no more complaint on this score now than usual, and we think not so much.

Boston.

BIGELOW & DOWSE.—The heat has been excessive the past two weeks and the fields and the lawns are brown for lack of moisture. The direct orders and those from the salesmen are well assorted and show the retailers' stocks are low. There is but little buying for the fall yet, but there is every indication that the trade will soon commence. The stocks of both Wire and Cut Nails are remaining low and assortments are broken, but prices remain unchanged. It is expected that both the Steel Cut and Wire Nail factories will start up August 1, when there will be an abundant supply and prices will be less firm. The dry weather has started up the sale for Lawn Sprinklers, which has been light until now. All the seaside resorts are very prosperous this summer, and one railroad, which has a large share of this traffic, reports additional receipts of \$40,000 for the past month.

Portland, Ore.

FOSTER & ROBERTSON.—Since our last there has been no marked change either in the volume of trade or in the matter of collections. The country is now busy with harvesting, which will naturally interfere somewhat with sales, and the collections will be postponed until the crops are realized on. The weather has been favorable of late for spring wheat, this having been the coolest July on record. Owing, however, to the short crop in many sections where the prospect early in the season was good and where merchants bought freely on the strength of it, the fall trade outlook is not such as might be desired. There is no change to report in prices, they remaining as heretofore reported.

Omaha.

LEE - CLARKE - ANDRESEN HARDWARE COMPANY.—The month of July just closed has been characterized by a very satisfactory business throughout, and we doubt if it has ever been equaled at this season of the year. This condition of trade has not been limited to any particular branch, but applies to the *tout ensemble*. No complaints are heard even from the farming community, and the general feeling is one of confidence. Coming to the flattering prospects for good crops throughout this section, just now the harvesting is in full progress, which usually diminishes the volume of trade for the time being, but as each month this year registers a heavy increase over any previous year, if trade is at all affected by the fact that

farmers are busy in the fields, it is not felt perceptibly. It is safe to announce the fact that crops of all kinds now being gathered are more than an average in quantity, and the quality will compare favorably with any past season. If only the price approaches anywhere near the market of last season, producers in this section will be entirely satisfied, and the volume of trade for balance of this year will undoubtedly beat the record by a large majority.

Louisville.

W. B. BELKNAP & Co.—There is a fair demand for material, but not so strong nor any such confidence in prices as one would expect from the long shut down of the mills. Steel Cut Nails have exhibited more activity than anything beside and an advance has been established on them for the time being. This is not at all surprising when all dealers had become accustomed to run with very light stocks and the mills themselves to carry light stocks. Some of the manufacturers, however, are writing as though the millennium had come and we were never to have any more hard times, or low prices, or disappointments of any kind in this life or the life to come. It is highly proper that they should improve the opportunity to make what can be made out of it, but it is useless to try to conceal from ourselves the fact that there are very few large new enterprises which lead to a rapid consumption of the finished products. Pig Iron, too, has been sold at very low rates here within the past ten days, lower, than ever known in its history. When many of the mills do start up they will have to take entirely new business, inasmuch as they refused it in early summer for later than July 1. We should be glad to see a better range of prices if it means better profits, but it is possible that the profit may be made out of the other end when any such price as \$7.75 at furnace for mottled can be secured by the buyer. The production of Pig for the first half of 1892—viz: over 5,000,000 tons—with the comparatively small addition to stock, shows how immensely consumption has grown. This has come with the cheapening of the Iron itself. If the makers can only see a profit it is better for them and the country at large that the prices should be low. The weather has been extremely hot and business much retarded thereby. We fancy that the small number of failures recorded by Dun for the past week—viz: 93, against 247 for the same week last year—are due rather to lack of energy on the part of prosecuting collectors than to the fact that there are not the usual number of brethren on the ragged edge.

THE NEW PLANT of the Arcade File Works at Anderson, Ind., has just been completed. The buildings have a total length of 600 feet, and are built wholly of brick, stone and iron. This is one of the concerns that have recently moved West, after having built up an excellent reputation in the East. Their Chicago office is at 23 Lake street, and New York office at 88 Reade street.

Notes on Prices.

Cut Nails.—An improvement is noticeable in the general condition of the Cut Nail market, owing principally to the fact that the production of the mills is considerably diminished, and manufacturers on this account, and from the uncertainty as to the labor outlook, are unwilling to quote for future delivery. Among the Western mills there is a perceptibly firmer tone and a slight advance in prices in some instances. For round lots at mill \$1.40 @ \$1.42 $\frac{1}{2}$ on a 35-cent average fairly represents the market, though some of the manufacturers decline to meet the first figure. In the East no change has been made in the agreement among the mills by which the price is maintained on the basis of \$1.55 for Steel Nails in carloads at mill on a 25 or 35 cent average, with equalization of freight. Iron Nails are 3 cents a keg less, and 1000-keg lots receive an abatement of 5 cents a keg.

The following are the prices of carload lots of Steel Cut Nails on dock, New York:

	Base.
25 to 30 cent average, extra	\$1.70
31 to 39 " " "	1.65
40 to 49 " " "	1.60
50 cents and up " " "	1.55

Iron Nails are held at 3 cents a keg less than Steel, and lots of 1000 kegs are 5 cents a keg less than the above prices. Steel Nails from store in New York are held at \$1.75, and Iron Nails at \$1.72.

Chicago, by Telegraph.—Cut Steel Nails are so scarce that manufacturers are having no trouble whatever in making sales, the trouble coming afterward when they try to fill the orders. Inquiries are being received here from all over the country. Standard sizes of Nails are in very short supply everywhere. The Laughlin Nail Company's mill is again in operation and some others will start up in a few days, so that the market will soon again be well stocked. Factory lots are selling in carloads at \$1.65, Chicago, on 30 cent average, but this price can be shaded on larger orders or later deliveries. Jobbers quote \$1.70 to \$1.75 from stock.

Wire Nails.—The market in Wire Nails is firmer and slightly higher than at our last report. While \$1.60 is probably obtainable on desirable orders, this price is not given as freely and the mills in many cases refuse to make it. The quotation therefore remains \$1.60 to \$1.65 for round lots at mill, the tendency being toward the latter figure. The price of Wire Nails from store in New York is \$1.85 to \$1.90.

Chicago, By Telegraph.—The price of Wire Nails is constantly stiffening. The lowest quotation on factory shipments is now \$1.70, Chicago, while not a few makers ask higher rates. Nails for August delivery are particularly hard to get. Large inquiries are out and the inducements would seem great enough to cause idle factories to resume operations. Jobbers report a very good demand and quote \$1.80 for small lots from stock.

Barb Wire.—The mills report more inquiry and an increase in business. There is also a better tone to prices, as some of

the manufacturers have withdrawn their quotations. The market is still represented by the quotation of \$2.62 $\frac{1}{2}$ to \$2.65 on Four-Point Galvanized, at mill, but these prices are more firmly maintained than at our last report. The understanding among the manufacturers as to prices from store in New York is well maintained, and quotations are regularly on a basis of \$3.10 for small lots, an abatement of 10 cents being made on carloads.

Chicago, by Telegraph.—Barb Wire manufacturers are now getting good inquiries and the fall trade seems to be about starting up. They quote \$2.20 and \$2.65, at works, for Painted and Galvanized respectively. Jobbers are doing but a small volume of business at present, while farmers are engaged in gathering crops, and quote from stock \$2.40 for Painted and \$2.90 for Galvanized.

Wrought-Iron Pipe.—We give below the revised list of Wrought-Iron Pipe, to which reference was made in our last issue. The list bears date July 21, 1892, and is as follows, subject to a discount of from 60 and 5 per cent. to 60 and 10 per cent.:

Wrought-Iron Butt-Welded Steam and Gas Pipe.

Inside diameter.	Price per foot, black.	Price per foot, galvanized.	Price per foot, extra strong, black.	Price per foot, double extra strong, black.
Inches.				
$\frac{1}{2}$	\$0.04	\$0.05	\$0.08	\$0.16
$\frac{3}{4}$	.04	.05	.08	.18
$\frac{5}{8}$	.04 $\frac{1}{2}$	.05 $\frac{1}{2}$	.09	.24
$\frac{7}{8}$	.06	.08	.12	.30
$\frac{9}{16}$	.07 $\frac{1}{2}$	.09 $\frac{1}{2}$	.15	.42
1	.10 $\frac{1}{2}$	.13 $\frac{1}{2}$	.21	.56
$1\frac{1}{4}$	.14	.18 $\frac{1}{2}$	.28	

Wrought Iron Lap-Welded Pipe.

Inside diameter.	Price per foot, black.	Price per foot, galvanized.	Price per foot, extra strong, black.	Price per foot, double extra strong, black.
Inches.				
$1\frac{1}{4}$	\$0.23	\$0.26	\$0.46	\$0.92
$1\frac{3}{4}$	33	.38	.66	1.32
$2\frac{1}{2}$	.50	.57	1.00	2.00
3	.62	.68	1.24	2.48
$3\frac{1}{2}$	.74	.88	1.48	2.96
4	.88	1.03	1.76	3.52
$4\frac{1}{2}$	1.06	1.31	2.12	4.24
5	1.28	1.60	2.56	5.12
6	1.65	2.00	3.30	6.60
7	2.10			
8	2.75			
9	3.75			
10	4.75			
11	6.00			
12	7.00			
13	8.00			
14	9.50			
15	11.00			

Glass.—The quietness in business, which is usual at this season of the year, together with the trades strikes, has made the Glass trade in New York unusually dull. It is estimated that about 15,000 men are now idle, causing some 80 buildings in course of construction to be tied up. The trades included in the strike are the bricklayers, carpenters, framers, masons and laborers, truckmen, marble cutters, tin and sheet-iron workers, derrickmen, and about half a dozen minor trades. The ruling price

for American Glass in small quantities appears to be 80 and 10 and 5 per cent. discount; and of French, 80 and 5 per cent. discount. It is understood that concessions are made from these figures in some cases. Reports from Pittsburgh indicate that the demand for Window Glass continues steady in fair volume, and that prices continue to improve. It is intimated that during the present month a perceptible increase in prices will be noticed. Quotations remain unchanged, as follows: American Window Glass, 1000-box lots or more, 80, 10 and 5 per cent. discount; carloads, 80 and 10 per cent. discount; less than carloads, 80 and 5 per cent. discount; French Window Glass, 80 to 80 and 5 per cent. discount; American Plate is held at a discount of 50, 10 and 5 per cent., and imported Plate at a discount of 60 per cent.

LOUISVILLE.

(From a Special Correspondent.)

THE HARDWARE TRADE of Louisville, Ky., is in a very good condition. True, in some lines there is very little doing, particularly in lighter goods that people can do without, but in the heavier lines there are no complaints to be heard. Current repair work has to be done, and this takes material, and this country being a large one, such business mounts up in the aggregate to tremendous proportions. Some people croak about threatening times approaching, but the country generally was never in a safer condition than at present. Frequent requests for extension are reported, much more than some jobbers like, but the very causes that require this state of things show the need of vast amounts of money to handle the enormous crops of grain just now coming into the market. The Hardware dealers can well afford to have their money switched off with this Grain trade. It is safe, and the Hardware trade is one branch of business that seldom borrows from the banks. So patent is this fact that it is a common saying that either none but rich men can carry on the business or there are vast possibilities in iron and steel products. The local trade is good; considerable building is going on in and around the city, and shipments from store are quite equal to this season of any year.

The shut down of the mills is beginning to be felt. Bar Iron is much stiffer and Sheets hold prices well. Steel Cut Nails are very scarce, few mills being able to furnish ordinary specifications, and it is a strange state of things that under these circumstances prices do not go up.

Wire Nails are firm at the advance and readily bring the present price when needed. It is puzzling, too, why prices do not go up. Evidently the whole country is going through a state of rest—a great lull—and as there is every prospect of prosperous times ahead, the dealers have no cause to foresee ill omens in a sky unclouded and serene, simply because a dull, hazy summer day is upon us.

The usual August buying will soon commence, and the rolling mills and factories will again be fighting among themselves.

IN THEIR ADVERTISEMENT occupying a page in this issue the Oneida Community, Niagara Falls, N. Y., call attention to their Chains, illustrating some of their leading sizes. These goods are fully represented in their illustrated catalogue, which shows also their well-known line of Traps.

G. M. Hanchett.

IN THE DEATH of G. M. Hanchett, treasurer and general manager of the Woodrough & Hanchett Company, Chicago, the Hardware trade of the Northwest loses a member who had already attained a conspicuous position and who seemed destined to become a much more prominent figure in the near future. Mr. Hanchett was a native of Janesville, Wis., and at the time of his death, which occurred on the 19th ult., was 47 years old. His connection with the Hardware trade began very early in his history. He spent some years with a Milwaukee Hardware house which is now extinct. He was afterward in business at Janesville and was for many years one of the firm of Hanchett & Sheldon. During that time he was interested in a Hardware house at Duluth, Minn., which is now known as the Duluth Hardware Company. Some five years since he went to Chicago to form a connection with Cutler, Woodrough & Co., at 16 Lake street. This firm was started in 1885 by R. L. Woodrough and J. H. Cutler, then vice-president of the Nashua Lock Company of Nashua, N. H., for the purpose of representing in Chicago the Nashua Lock Company, and the Woodrough & McParlin Saw Works of Cincinnati. Their plan of representation by sole agents to the larger Western trade proved so satisfactory that they were induced to accept the agency of other well-known manufacturers through the East. The business of the house increased steadily under the charge of R. L.

Woodrough, who continued in Chicago until 1890, when he accepted the position of treasurer and general manager of the National Saw Company of New York. The firm of Cutler, Woodrough & Co. was changed to the Woodrough & Hanchett Company, Mr. Hanchett taking the office of treasurer and general manager. Last year this company purchased the well-known Hardware house of A. F. Seeberger & Co., and removed to the latter's location at 38 and 40 Lake street, where they now are. The consolidation of the business interests of these two important houses gave the Woodrough & Hanchett Company a much stronger hold on the business of the Northwest than they had previously held. Under the management of Mr. Hanchett the business has grown continuously, and the company have the brightest prospects before them.

The death of Mr. Hanchett was very un-

expected. A few weeks ago he had the misfortune to fall and break one leg. Shortly after this accident occurred he was attacked with rheumatism, to which he had not been subject, and in spite of the efforts of his physicians the disease advanced to his heart, causing his death. Mr. Hanchett was a very genial and sociable man, with a winning disposition, which secured friends wherever he became known throughout the trade. Immersed in his business, he gave but very little attention to outside matters and was therefore known to but little extent elsewhere than in exclusively trade circles. He leaves

arrangement in contemplation. The formal announcement of the plan, which goes, it will be observed, into some detail, was made under date October 20, 1890:

Announcement of E. C. Atkins & Co.

OCTOBER 20, 1890.

TO OUR EMPLOYEES.—One of the great questions of this age, perhaps the most important that concerns us, is that which relates to capital and labor. The occasion which brings this question into prominence is largely the result of a misapplication of terms, and an effort on the part of agitators to create an antagonism which does not really exist. In reality the poor man's labor is his capital. Its value as capital depends upon the skill and industry with which such labor is endowed. The rich man's capital is his money, and its value as capital depends also upon the skill and wisdom with which it is invested. The professional man's capital is his knowledge, and its value also depends upon his right understanding of it, and its right use. A better term to use is money with labor or labor with money. Each has its function; both are essential to the accomplishment of the highest ends. There is no human achievement to which either is unnecessary. The organization of money against labor or labor against money is inconsistent with the common good. If each is indispensable to the greatest achievement, then surely there is some basis, some common ground upon which they may operate, no longer as the separate, antagonistic forces, but in perfect harmony. Such a basis is found only by a recognition of the rights of each.

The self-evident right of labor is compensation—wages. Whatever may be said against the wage system, the man has never lived and never will, to whom the world does not owe a livelihood, and in proportion to the service rendered. It is equally self evident that money is entitled to a recompence for its use whenever it contributes to the common good. If these propositions are true, then it follows that all adjustments of the relations of money and labor must recognize these rights, and when in transactions involving the investment of money and labor as capital there is any outcome, each should share in that outcome. Upon this recognition of what is right, just and equal we have formulated a declaration to which we invite your kind consideration and ask your hearty co-operation in carrying it into effect, say, for at least one year. It may embody imperfection, but is based on the golden rule. In accordance with this statement, we announce that for the year beginning May 1, 1891, all our salaried officers and men and all employees may share in the net earnings of our business, the exceptions being as follows:

1. Those who voluntarily leave our employ during the year.
2. Those who for good cause are discharged during the year.
3. Persons who are members of any



G. M. HANCHETT.

a widow, two daughters and a son. Mr. Hanchett's death will not cause any immediate change in the style of the house or the conduct of their business, except, of course, in the rearrangement of the several departments. Being a stock company, contingencies of this kind have to some extent been anticipated.

Profit Sharing.

FOR MORE THAN A YEAR E. C. Atkins & Co., the well-known Saw manufacturers of Indianapolis, Ind., have been working under a profit sharing arrangement with their employees, the details and results of which we are enabled to lay before our readers. As relating to a question which is receiving a good deal of attention among manufacturers, the matter is one of quite general interest, and the method adopted in this case may be suggestive to others who have a similar

other labor organization than the one herein designated, viz., Profit Sharing Employees of E. C. Atkins & Co.

The basis of profit sharing is:

1. That the wages due to labor must be first paid.

2. The wages or interest upon the capital stock of the company, amounting to \$500,000, at 8 per cent. per annum, must next be provided for.

3. Whatever remains thereafter as the net earnings of the business for the year will be divided to capital stock and labor of persons employed and participating, in proportion to the investment of each—that is to say, the capital stock of the company, \$500,000 on the one hand, and the total amount of salary and wages accounts of persons in our employ entitled to participate on the other.

4. The payment of the profits to each person entitled to receive the same will be made in one payment, or in installments, as the condition of the business will permit. The persons entitled to participate and the time of payment will be designated by the Board of Directors of the company.

5. No employee will incur any risk in the business.

Respectfully submitted,

E. C. ATKINS & CO.

There are, we are advised, about 400 employees in the factory, of whom 270 shared in the profits last year, among whom \$9,306.64 was divided. The experiment is regarded as having worked satisfactorily, so much so that it has been decided to continue the plan with some modifications for another year. The satisfaction with which the arrangement is regarded by the employees is indicated in the following communication from them, which was published in the Indianapolis *Journal*, July 24 :

In May, 1891, Messrs. E. C. Atkins & Co. declared their factory placed upon the profit-sharing basis, and that all parties working for them at the close of their year's business in April, 1892, would participate in the profits, except those belonging to labor unions.

We scarcely understood the meaning of this declaration, and some that are not included in it insinuated a great deal. But we have before us now the result, and at the winding up of the profits for the past year there was placed to the credit of the profit-sharing account close to \$10,000, to be divided among the employees.

We have now received our portion, being paid in cash, and we deem it our duty on such an occasion as this, which is not equaled by any factory in this vicinity, to thank the firm for the kindness entertained by them toward us, and, at the same time, to assure them that we will contribute all in our power toward the success of the business.

Mr. Atkins announces that the factory will continue upon the profit-sharing basis for the coming year, and will include all persons, even those belonging to labor unions.

We trust, Mr. Editor, you will give this card of thanks the necessary space in your valuable paper, as we desire the public to know what a noble, generous firm we are working for, who are not always antagonizing labor and treading it down, but are seeking to elevate it to a standard of excellence. If our country was blessed with more such firms labor unions and strikes would be things of the past.

EMPLOYEES who participate in the profit-sharing account.

The announcement by E. C. Atkins & Co., of their intention to continue the arrangement another year is given below. It will be observed that among other modi-

fications in the plan it is somewhat extended as to the employees who are entitled to participation in the profits:

June 12, 1892.

To Our Employees and Salaried Men:

We have before us the result of our first year of profit sharing, the amount to be divided to employees and salaried men being \$9,306.64. In the main the result is satisfactory. The fullest success in this undertaking can only be attained by the earnest co-operation of every man in the establishment. It was hardly to be expected that every one would feel his full measure of responsibility to promote the general welfare, until it had been demonstrated that industry and constant vigilance in the performance of duty would bring satisfactory results. This we may consider to be fairly proved, and the dividend to capital and labor, in proportion to investment, is equal to the usual annual rate of interest on loans made on good security. Such a result is certainly gratifying. Had each man saved his entire earnings and waited a year for interest to accrue, he would have realized no more for the use of the money than he has by accommodating himself to the system of profit sharing.

Of most of the employees it may be said that each has honestly endeavored to employ his time to the advantage of the business, and with the result of the year's business declared, may we not expect that every man will do his full duty, and that the result of another year will be even more flattering. By experience we learn wisdom, and it is to be expected that it will be found necessary to make some changes and introduce reforms from time to time, as experience shall dictate. The business must not be undermined by too large drafts upon its working capital. Emergencies must be provided for, and above all, integrity and industry must characterize the management and the industrial force of the establishment. These assured, we may go on from year to year under reasonably favorable conditions, adding more or less to the wealth and comfort of every one interested. We must not lose sight of the fundamental principles upon which we base the system—1, that labor is entitled to its wages; 2, that capital is entitled to its wages; 3, that there must be a reasonable provision for emergencies, lest the capital necessary for the prosecution of the business become depleted; 4, the wages of labor and capital being paid, and a reasonable contingent provided for emergencies, the remaining profit, if any, may be divided to capital and labor in the ratio of investment. It is upon this basis that we will undertake profit sharing for another year, commencing May 1, 1892, and closing April 30, 1893.

The question of sharing profits with employees who are members of labor organizations and unions has been considered. It is an old axiom that "a house divided against itself cannot stand," and we believe it would be far better and safer if there was no labor organization taking upon itself the responsibility to dictate terms to employers in establishments where profit sharing is in practice. At the same time, the officers and stockholders of the corporation of E. C. Atkins & Co. are very desirous that every person in the employ of the company, and contributing in any way to the success of the business, should participate in the earnings of the business. Notwithstanding the seeming inconsistency of admitting to participation of profits members of organizations antagonistic to the highest interest of the business, we have resolved to admit members of such organization to participation, so that all our employees may receive whatever benefit may accrue from profit sharing. We therefore announce that all our employees

and salaried men will be admitted to share in the net profit of the business for the current year, as stated above, upon the following conditions:

BASIS OF PROFIT SHARING.

1. After providing for the payment of 8 per cent. interest and 2 per cent. contingent fund upon the capital stock of \$600,000, the net profits will be divided pro rata to capital and labor in proportion to investment.

2. Whatever remains thereafter as the net earnings of the year will be divided to capital stock and labor of persons employed, in proportion to the investment of each; that is to say, the capital stock of the company—\$600,000—on the one hand, and the total amount of the salary and wages accounts of persons in the employ of the company entitled to participate, on the other.

3. The payment of the profits to each person entitled to receive the same will be made in one payment or in installments, as the condition of the business will permit. All questions respecting the amount of net earnings, time of payment, and who are entitled to participate in the profits, will be decided by the Board of Directors of the company, and their decision will be final.

4. No employee will incur any risk in the business.

The following persons will be excepted from participation in the profits: 1, those who voluntarily leave our employ during the year; 2, those who, for good cause, are discharged during the year; 3, any persons participating in, aiding or abetting a strike during the year; 4, all members of labor organizations which organizations shall attempt to enforce rules and regulations of the organization antagonistic to the interests of the business, even though such rules and regulations may be enforced in other establishments; 5, contractors and their employees will be excluded from participating in profits on contract work.

All persons in our employ not engaged on piecework are hereby notified that they will be paid by the hour, as heretofore, and that no change whatever will be considered. Eight hours, commencing at seven in the morning and closing at four in the afternoon, will constitute the regular hours of labor. The same wages will be paid for overtime as for the regular eight hours. All persons wishing to work overtime will notify the superintendent, and if a sufficient number wish to work longer than eight hours to justify running the factory, we will accommodate them, otherwise the factory will close down at 4 o'clock p.m.

Respectfully submitted,

E. C. ATKINS & CO.

Trade Items.

ANNOUNCEMENT is made by Wells Bros. & Co., Greenfield, Mass., manufacturers of the Little Giant Screw Plates, Bolt Cutters, Blacksmiths' and Carriage Makers' Tools and Machines, that the services of W. C. Brown of Chicago have been secured to represent their interests in the States of Ohio, Indiana, Missouri, Iowa, Kansas, Nebraska, Minnesota, Wisconsin and Michigan in the capacity of traveling salesman. Mr. Brown's acquaintances in the West among the heavy iron houses will doubtless be pleased to learn that he has added this well-known line of Tools and Machines to his agencies.

THE EMPIRE PORTABLE FORGE COMPANY, Lansingburg, N. Y., announce that they have opened an office for the accommodation of the Southern trade at 25 Hanover street, Baltimore, under the care of Henry Keidel & Co., who will carry a stock of their specialties and endeavor to fill up all "pick-up" orders from that point. The travelers of Henry Keidel &

Co. will also, we are advised, visit the trade in the South in the interest of the productions of the Empire Portable Forge Company.

KELLEY & WOOLWORTH, Niagara Falls, N. Y., with New York office at 59 Murray street, in their page advertisement in this issue call attention to the line of goods which they are putting on the market. These include Aluminum Dog Collars, of which an illustration is given, Key Chains, Coil Chain and Dog Leads in large variety. Their Kelley's Patent Sash Fixture is also illustrated. Besides these goods, they are manufacturing Swivel Harness Snaps and Sheet-Steel Halter, Trace, Sash and Plumbers' Chain.

ANNOUNCEMENT IS MADE under date July 25 by Charles L. Sherman that he has associated himself with the Philadelphia Wire Nail Company, 314 and 316 Green street, Philadelphia, having merged his business into theirs. In making this change it is stated that he will in the future be able to have all orders filled with greater promptness. The officers of the Philadelphia Wire Nail Company are now as follows: Samuel L. Small, president; Jas. A. Hayes, treasurer; Robt. W. Finletter, secretary, and Chas. L. Sherman, superintendent.

AMONG THE SPECIAL NOTICES in this issue Haydock & Bissell, 12 Murray street and 15 Park Place, New York, announce a trade sale of Table and Pocket Cutlery, Carvers, Butcher Knives, Plated Flatware, Scissors, Shears, &c., on Tuesday, Wednesday and Thursday, August 9, 10 and 11. Announcement is also made that on Wednesday and Thursday, August 17 and 18, a large special and peremptory trade sale of Agate and Granite Ware seconds, Blue and White and Stamped Tinware, Nickel-Trimmed Tea and Coffee Pots, Decorated Central-Draft Vase Lamps, &c., will take place. Full particulars of the latter sale will appear in our advertising columns next week.

BUHL STAMPING COMPANY, Detroit, Mich., are preparing for the demands of the coming campaign, and are putting on the market Decorated Tubular Lanterns. They have bright red frames, a double coating of vermillion and varnish, the globes being striped red, white and blue. The republican Lanterns have Harrison and Reid stenciled on the globe, and the democratic have the names of Cleveland and Stevenson. They are referred to as meeting with a large demand.

IN NOTICING the catalogue of Slaymaker, Barry & Co., Lancaster, Pa., in our last issue, we referred to J. C. McCarty & Co. as their agents. This statement was, however, an error, as John H. Graham & Co., 113 Chambers street, New York, are agents for the sale of these goods.

CHARLES J. HEALY, 106 Chambers street, New York, importer and manufacturers' agent, send us a well-arranged catalogue of 72 pages representing the goods dealt in by him, many of which he is sole agent for. Among them is a full line of Steel Squares, both polished and nickel plated; Table Knives and Forks, Carvers and Game Knives, Kitchen, Bread and Butcher Knives, in a variety of styles and finishes; Water Hones, Turkey Oil Stones, Razors and Razor Straps, Flat and Round Nose Pliers, Cutting Nippers, Vises, Dividers, Compasses, Corkscrews, Nutcracks, together with a number of French novelties, including Bellows, Key Rings, Concaving Stones, Strop Holders, Larding Needles, &c. On the third page this announcement is made: "Our representatives make regular visits to the manufacturing centers of England, Germany, France and Belgium, and we are thus enabled to execute any orders intrusted to us at lowest possible rates. We aim to carry a full stock of all goods quoted in this catalogue."

Export Notes.

MEXICO continues to absorb large quantities of corn, that Government having extended the time beyond July and August for suspension of import duty on this cereal. When the suspension was announced quantities of corn held by speculators was thrown on the market, checking importations somewhat for the time being. A reliable New York commission house, quoting from a letter received the current week from a commercial correspondent in one of the States in Northern Mexico, said no rain had fallen in that State this year, and in five near by States none worth mentioning in the last three years, making this the third crop failure. Orders for general goods are smaller in volume, but more frequent, dealers simply supplying themselves for immediate wants. Freights continue low, some of the coarser goods going as low as 40 cents per hundred to Mexico City. Rates of exchange and the price of silver remain about the same.

William E. Peck, export commission merchant to South America, Australia and England, 62 and 64 William street, New York, in addition to a miscellaneous consignment of goods, is shipping a wood-working plant, consisting of boilers, engines, shafting, belting and materials for a saw mill, to China, most of which is aboard W. R. Grace & Co.'s steamer Eboe, sailing this week.

A New Steamship Line to South America.

EXPORT MERCHANTS doing business with South America, will be gratified to learn that Norton & Son, ship and freight brokers, 90 Wall street, New York, in addition to their old established sail lines to River Plate ports and South Africa, have decided to put on a regular steamship service from New York to Montevideo, Buenos Ayres, Rosario and Parana River ports, thus giving their patrons the privilege of shipping by steam or sail as the necessities of their business may warrant. Their purpose is to make it a regular service with monthly sailings, and they invite the co operation of shippers to make the venture a success. Every step that increases facilities, shortens the time and lowers the rates of freight is a move in the right direction toward enabling merchants in this country to get their proportion of this trade, as against European competition. The A1 steamship James Watt will soon be in berth at Martins' Stores, Brooklyn, to be dispatched about September 10. In their circular announcing the establishment of this line they say:

We shall endeavor to charter only good steamers with limited passenger accommodations (something better than the ordinary "tramp").

Rates of freight for the present will be as follows:

For Montevideo and (or) Buenos Ayres: Refined Petroleum, 10 to 20,000 case lots, in customary low-top cases, 35 cents net.

Refined Petroleum, less than 10,000 cases, 37 $\frac{1}{2}$ to 40 cents net.

Refined Petroleum, high-top cases, 2 cents per case additional.

Rosin, \$1.35 net per 250 pounds.

Large lots Harvesting Machinery, 18 cents and 5 per cent. per cubic foot.

Hardwood Lumber, \$16 net per 1000.
White Pine Lumber to fill, in limited quantities, \$10 net per 1000.

Turpentine, Lubricating Oil, in barrels, Lard, &c., 18 to 20 cents and 5 per cent. per cubic foot.

Miscellaneous goods, 20 to 25 cents and 10 per cent. per cubic foot, as to value, quantity, &c.

Special low rates will be made for Machinery, Locomotives, Railroad Cars, &c.

When requested, we will give privilege on bills of lading for delivery of goods at Montevideo and (or) Buenos Ayres; also Buenos Ayres and (or) Rosario.

All freights to be prepaid.

Among the advantages of steam over sail are 30 instead of 60 days' passage, better protection for goods, and a reduction in marine insurance of from $\frac{1}{2}$ to $\frac{1}{4}$ of 1 per cent. A leading export house in this city says that steamer rates at not over one-half advance on sail tariff they always take advantage of, except on coarse goods. A fair average rate by sail is 15 cents per cubic foot with prime added.

Hardware and Tools.

PETER A. FRASSE & CO., 95 Fulton street, New York, who carry a large and well assorted line of fine tools and supplies for metal and wood workers, have recently rearranged the interior of their store, introducing many improve-

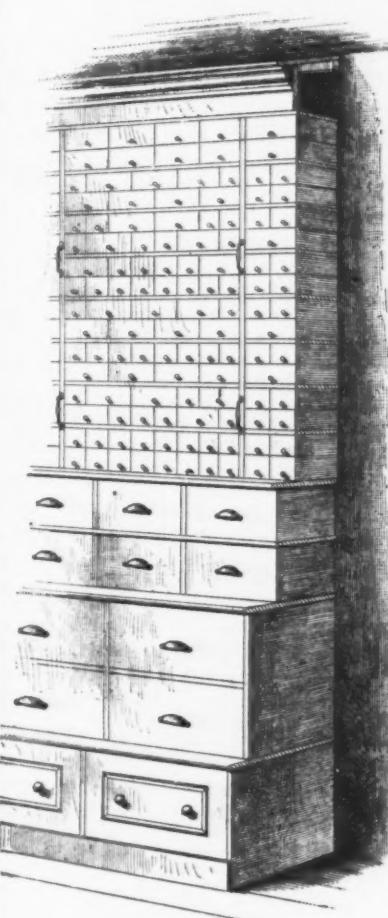


Fig. 727.—Step Shelving with Handles Above.

ments which facilitate the handling of goods. They occupy the first, second and third floors of the building, each of which is arranged with special reference to the goods carried in the different departments. The bookkeeping and financial department offices are on the second floor, while the private offices of the members of the

firm are on the first floor near the front entrance of the store. The shelving, as shown in Fig. 727, occupies the entire length of one side of the store. To obviate the necessity of ladders, the lower part of the shelving is provided with steps, by which to reach the upper drawers. The first step is 17 inches high, the next one 21 inches and the third 16

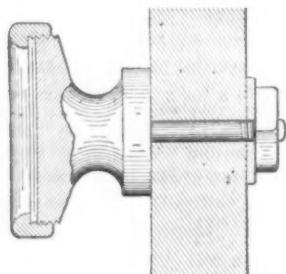


Fig. 728.—Side View of Drawer Knob.

inches. The small drawers occupy a space of 5 feet in height, and upon each division of this shelving are brass handles, by which the salesman steadies himself when taking down or putting up goods. From the illustration it will be seen that the front edge of the cornice is about 4 inches below the ceiling, and that the top board

Knob of their own invention, as shown full size in Fig. 728. It has a cast body with threaded bolt, nut and washer, and a screw rim cap, as shown in Fig. 729. The name of the article the drawer contains, with the price each and list per dozen, are printed on a circular piece of paper. Over this is placed a piece of mica, and both are placed in the screw rim cap, and screwed on to the knob. This is used in connection with the sample and gives the desired information as to price, size, &c., at once, and allows a new clerk to sell goods readily. These Knobs, we are advised, may be purchased by the trade, who will appreciate the convenience of the contrivance.

Display Stand for Farm Bells.

THE ACCOMPANYING cut, Fig. 730, illustrates a home-made stand for displaying Farm Bells, for which we are indebted to Hardware Charlie of St. Louis. A stand for four sizes of Bells, Nos. 1, 2, 3 and 4, should be made 6 feet long, but if made for but Nos. 1, 2 and 3, 4 feet is the right length. The width of the top in either case should be 18 inches. For the three sizes of Bells that have the arm hanger cast in one solid piece with a taper-

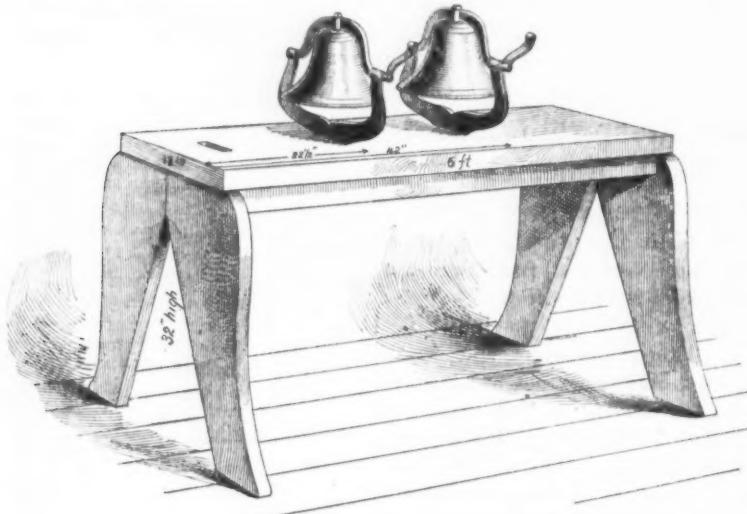


Fig. 730.—Display Stand for Farm Bells.

slants upward so that at the wall it touches the ceiling. The top board is covered with tin, so that in the case of fire, after tarpaulin has been put up before the shelving, water thrown against the tarpaulin or the ceiling will be thrown off by

ing bottom, holes are mortised in the stand to receive them. The tapering bottoms will allow the hangers to stand upright without the aid of bolts or screws, and in this position the Bells may be placed in the hangers. The mortised openings should be of the following sizes for Nos. 1, 2 and 3 hangers: $\frac{1}{4} \times 5\frac{1}{2}$, $\frac{1}{4} \times 6$ and $\frac{1}{4} \times 6\frac{1}{2}$ inches. The hanger for the larger size Bell is different in shape, and is bolted or screwed on to the stand. The Bells can easily be removed when sold from the stand. A modification of this stand can be made with straight legs, with casters; and with one or two shelves underneath for goods. This will allow the stand to be moved easily, run out in front of the store for show, and forms an excellent place for handles or handled goods. This manner of displaying Bells is referred to as a great improvement over keeping them on the floor or hiding them in some corner of the store or cellar, and as a means of increasing the sale of goods in this line.



Fig. 729—Front View of Drawer Knob.

the tin-covered inclined board without injury to the stock.

The firm have also introduced a Drawer

It Is Reported—

That the Charles Wanless Co. have been incorporated at Salt Lake City, Utah. The capital stock of the company is \$15,000, and they will deal in Hardware and Tinware.

That List & Schuler are a new Hardware concern at Leroy, Ill.

That Chas. J. Seavey has purchased the Hardware and Tin business of the estate of the late Rudolph Biebow, Poland, N. Y. He will continue it with John Lankton of Cold Brook as a partner.

That Cyrus Smith, dealer in Hardware, Athol, Mass., has disposed of his business to Clifton Smith and Ralph Haskins.

That J. R. Sherman has bought the Hardware stock of D. H. Hull, Oklahoma City, Okla., and will continue the business.

That N. Bruner has sold his interest in the Hardware firm of Bruner & Alber, Wabash, Ind.

That William Harrison, dealer in Hardware, Wakefield, Neb., is selling out.

That the wholesale Saddlery Hardware firm of Plumb & Sheldons, Elmira, N. Y., has dissolved. Frederick M. and Morris W. Sheldons will continue the business.

That Clark & McDonald, Hardware dealers, Ridgetown, Ont., have dissolved partnership.

That Mrs. M. B. Cooney, dealer in Hardware, Lagrange, Ind., has been burned out.

That F. R. Field, dealer in Hardware, Sanborn, Iowa, has been succeeded by F. R. Field & Co.

That Arthur Duvic, Hardware merchant, Algiers, La., has been burned out. Insurance, \$3000. Patrick Hartnett, at the same point, was also burned out, with an insurance of \$4500.

That Likens & Horton, Hardware dealers, Bassett, Neb., have sold out.

That McMullen, Schlager & Ferber, dealers in Hardware, Scranton, Pa., have been succeeded by the Lackawanna Hardware Company.

That S. J. Lowe is about to sell out his Hardware business at North Yakima, Wash.

That F. Schoenman's Hardware store at Spring Green, Wis., has been burned out.

That Tomlinson & Williams succeed E. P. Shepard in the Hardware business at Osage, Iowa.

That L. H. Todd & Co., Hardware dealers, are enlarging their establishment at Stratford, Conn.

That John A. Kerr, Hardware merchant, Regina, Man., is about to erect a brick building for his business.

That the Maclay Hardware Company have opened a new Hardware and stove store at 669 Main street, Dubuque, Iowa. The members of the company have had an extended experience in the Hardware field and are starting out under auspicious circumstances.

That G. T. Harris, Plymouth, Mass., has bought a large building on Market street, where he will locate his Hardware business as soon as the building is vacated.

That William A. Hammer, Des Moines, Iowa, has contracted to sell out his stock of Hardware.

That the Hardware firm of Le Sueur & Widman, Appleton, Wis., has dissolved.

That Rohrbacker & Allen's Hardware store at Akron, Ohio, has been destroyed by fire.

That S. Drabelle, dealer in Hardware, Owensesboro, Ky., has disposed of his business to Messrs. Bishop, Gregson & Beeler, who have heretofore been employed in the house as traveling salesmen. They will continue the business at the old stand.

That the Hardware store of George Jewell, Machais, N. Y., was burglarized on the 19th ult.

That Lamson & Robinson have recently entered the Hardware business at Marlboro, Mass.

That the Hardware store of John Hall, at Nevada, Ohio, was burglarized on the 25th ult., and a large quantity of Cutlery taken. This is the third time within two months that the store has been robbed.

Exports.

PER BARK SCHWANDEN, JULY 23, 1892, FOR DUNEDIN, NEW ZEALAND.

By Rogers, Smith & Co.—16 packages Silver Ware.

By Manhattan Brass Company.—10 barrels Lamps.

By Alfred Field & Co.—4 cases Fruit Jars.

By Australasian-American Shipping Company.—1 case Forgings, 158 packages Binders and parts.

By Adriance, Platt & Co.—25 packages Binders.

By W. H. Crossman & Bro.—7 cases Lamp Goods.

By Strong & Troubridge.—9 cases Hatchets and Hammers, 1 bundle Rubber Springs, 1 case Wrenches, 1 case Forges, 3 cases Hay Rakes, 9 cases Handles, 4 cases Tacks, 1 case Braces, 3 cases Mattocks, 5 crates Handles, 1 case Drills, 3 cases Lanterns, 1 crate Rat Traps, 1 case Lemon Squeezers, 1 case Clamps, 3 cases Fruit Jars, 1 case Rifles, 1 case Pulley Blocks, 5 cases Meat Choppers, 1 case Molasses Gates, 2 cases Lanterns, 2 cases Screws, 1 case Knife Trays, 7 cases Lampware, 2 cases Cartridges, 2 cases Grindstone Fixtures.

By Arkell & Douglas.—5 cases Axles, 2 cases Springs, 2 cases Nails, 3 cases Shovels, 1 case Egg Beaters, 12 cases Choppers, 27 cases Fire Arms, &c., 4 cases Wringers, 1 bale Cordage, 1 case Sandpaper, 4 packages Lamp Goods, 3 packages Blocks, 24 cases Grindstone Fixtures, 3 crates Churns, 6 cases Scales, 6 cases Handles, 12 bundles Hardware, 600 reels Barb Wire, 3 cases Horse Nails, 16 cases Lawn Mowers, 8 cases Forks, 1 case Rakes, 7 cases Tools.

By Edward Miller & Co.—20 packages Lamp Goods.

By the Coombs, Crosby & Eddy Company.—1 case Rifles, 1 case Wrenches, 2 packages Grindstone Fixtures.

By Australasian-American Shipping Company.—1 case Axles, 1 case Reaper Repairs.

By W. H. Crossman & Bro.—3 packages Pump Parts.

By Arkell & Douglas.—1 case Sash Cord, 5 cases Wringers, 12 crates Stoves, 5 cases Horse Nails, 8 cases Grindstone Fixtures, 4 cases Wringers, 27 cases Cartridges, 2 cases Mangles, 2 cases Air Guns, 6 cases Axes, 18 cases Handles, 12 cases Hardware, 6 cases Tools, 3 cases Rakes, 3 cases Axles, 5 cases Forks, 17 packages Lampware.

FOR FREEMANTLE.

By Arkell & Douglas.—6 dozen Axles, 16 cases Axes, 3 cases Handles, 2 cases Scales.

By Rogers, Smith & Co.—2 cases Silver Ware.

By C. S. Whitney.—30 cases Axles, 1 case Drills, 6 cases Meat Choppers, 2 cases Shovels, 1 case Hardware, 6 boxes Axes, 3 cases Wringers, 1 case Fire Arms, 1 case Hardware, 6 cases Scales, 1 case Whip Sockets, 1 case Handles, 1 case Hardware, 1 case Wrenches, 6 cases Wringers, 2 cases Mangles, 29 boxes Axes and Hatchets, 3 boxes Mattocks, 2 boxes Hatchets, 5 boxes Hardware, 1 case Hammers, 3 boxes Picks, 12 boxes Handled Axes, 4 barrels and 2 boxes Blocks, 4 cases Hardware, 1 barrel Hoes, 2 cases Meat Choppers, 2 cases Hammers, 3 cases Nails, 2 cases Wringers, 1 case Braces, 1 case Wrenches, 3 cases Mattocks, 2 cases Store Trucks, 5 cases Picks.

PER BARK CEYLON, JULY 25, 1892, FOR CAPE TOWN, SOUTH AFRICA.

By Arkell & Douglas.—28 cases Fruit Jars, 2 cases Lamps, 35 kegs Nails, 20 cases General Hardware.

By Walter A. Wood Mowing and Reaping Machine Company.—30 Reapers.

By M. Berliner.—12 cases Axes, 6 cases Handles.

FOR EAST LONDON.

By Arkell & Douglas.—76 dozen Axles and Hatchets, 300 reels Barb Wire, 366 cases Plows and Parts, 65 kegs Nails, 18 cases Handles, 20 cases Scales, 6 crates Churns, 33 Washers, 2 dozen Barrows, 9 cases Fruit Jars, 27 packages General Hardware, 10 cases Axes, 4 packages Lampware, 2 cases Plow Fittings.

Paints and Colors.

It should be understood that the prices quoted in this column are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a considerable range of prices.

Now that the autumn season trade is near at hand, manufacturers and jobbers display more interest in the matter of securing advance orders for various lines of Paints and Colors. Up to the present time, however, there are no signs of extraordinary rivalry in any line. As a matter of course, the consolidation of the Devoe and the Raynolds concerns puts competitors on their mettle, since the power that the combined interests may exert is to be tested; but thus far no departure from ordinary business principles is noticeable in any quarter. That is to say, special quotations on goods of the more staple variety are conspicuous by their absence, and it does not appear that specialties are put upon the market at prices that differ in any marked degree from those that have ruled for several months past. There has been a little variation in cost of some lines of base materials, yet not enough to have any decided effect upon the market for goods into the composition of which they enter prominently, and at present the outlook is bare of signs of important impending changes in prices of manufactured articles of either staple character or specialties. In point of fact, the prospects are for steady prices rather than radical fluctuations, and were it not for the drawback of labor troubles in the building trade there would be little or no cause for complaint.

White Lead.—Some manufacturers of "quick-process" White Lead have been remarkably active of late in endeavors to push the sale of their goods, and, according to current reports, they have made apparently low quotations to facilitate business. For example, the range of 6¢ @ 6½¢, as to size of order, would appear to have become popular quotations on that class of pigment. This naturally prompts uncertainty among various buyers as to what corroders who employ the old Dutch process may do in return. The latter, however, manifest no uneasiness, since investigations bring out what they consider satisfactory evidence that the cheap product does not give entire satisfaction and makes no headway against old-process Lead outside of the experimental stage. It is remarked also that the entire product of the cheap article is not over 1500 tons per annum, or too small to be seriously considered. Corroders adhere to their old list prices and discounts, and report comparatively good sales for the season. In the instance of brands particularly favored in this locality, deliveries are said to be running very closely to current production. Cut prices are still made by jobbers, but the concessions are hardly as great at the present time as they were a few weeks ago.

Zincs.—No change is noted in the market for American Oxide. Orders are rather light, as not unusual at this season of the year, yet a fair business is put through at intervals, and the old line of prices is generally adhered to. Foreign brands are without quotable change in price and fail to find other than very commonplace sale.

Colors, &c.—Grinders' stock has been moving at about former prices, but rather slowly, and the market is devoid of new or interesting feature. Dry and Oil Colors for house painters' use have also been rather quiet, but where first-quality goods are concerned prices remain quite steady. Mixed Paints are slow, but in cheap Metallic Paints there is a fair business at old prices.

Miscellaneous.—There has been no change in the market for Block Chalk, and the situation in Whiting and Putty is likewise unchanged. Clays, in general, are rather slow at about former prices.

Oils and Turpentine.

Business in nearly all varieties of Animal and Vegetable Oils has been of routine character, and influences or other features that would contrast with those in force a week ago are exceedingly few. In the West there is still a sharp competition between manufacturers that keeps Linseed Oil values disturbed and more or less unfavorably affects business in the product. Cotton Seed Oils are also affected by local influences, the chief of which is unusual slowness of both export and home trade demand. Otherwise there is really nothing of distinctly new character in the surroundings, while business is of routine character for the season nearly all along the line.

Linseed Oil.—Western competition has continued keen, and the market remains in an unsettled condition. It is said that manufacturers not identified with the National Company, some of whom find it necessary to realize even at the expense of a concession on price, have offered raw Oil in some quarters at as low as 38¢, and rumors prevail of still deeper cuts having been made in remote instances. The National Company are said to have met all prices made by the outside concerns, and shaded their nominal price where necessary to hold or gain ground. Since occasion for such action has been confined to other points, no official announcement of change in quotations for New York delivery was made, and local manufacturers, therefore, maintained last week's prices pending developments.

Cotton Seed Oils.—Business in both crude and refined product has been of very limited proportions and neither export nor home inquiries are of a character that would suggest any turn for the better in the immediate future. Exporters, as a matter of fact, are receiving none but small inquiries and comparatively few of those, while home buyers operate in a strictly hand-to-mouth way. Supplies in first hands are well under control, and, with ordinary demand, prices would doubtless improve. As it is, however, the little business passing is at prices slightly below those that have been quoted of late, and the market shows rather soft undertone.

Menhaden Oil.—The association announces that prices on crude Oil have been fixed at 31¢ for prime Light and 30¢ for Brown and that no change will be made prior to their next meeting, which is down for the latter part of the month. This position is attributed to the fact that the catch of fish is still moderate and the new supply of Oil comparatively small. The home demand is slow, however, and there are no European orders. Competing goods are cheaper in the foreign markets.

Sperm and Whale Oils.—Reports from New Bedford note a quiet market there for the crude products, but state that holders are very firm on prices. The manufactured goods remain unchanged here and move rather slowly.

Lard Oil.—High cost of raw material still causes manufacturers to produce Oil sparingly. The supply is therefore kept very close to positive outlet and prices remain firm in the absence of larger offering from outside sources. Business is rather slow, however, and the demand lighter than usual at this season of the year.

Spirits Turpentine.—Business in this article has continued very quiet, and although receipts have been moderate some accumulation of supplies has taken place. Prices have ruled a shade lower in consequence, with 29¢ for regular and 29½¢ for machine barrels the more general rates during the latter part of the week.

The Magney Cate Sash Balance.

Woodrough & Hanchett Company, Chicago, Ill., are introducing the Magney Cate Sash Balance, herein illustrated. They are made in ten sizes, Nos. 0 to 9, and it is claimed these sizes are sufficient for

the stud B B cut away, E F representing the sash. Fig. 6 shows sections of the sash with balances in position. The ratchets for winding the springs are represented by the letters B B, while C is the socket and spiral spring by which the balances are adjusted.

from the outside; the lock being automatic in its action the window is always locked whether open or shut, making it burglar proof; it does not require pockets for weights, dispensing with box frames, thus giving greater strength to the walls; when placed in position nothing is seen



Fig. 1.—Magney Cate Sash Balance.

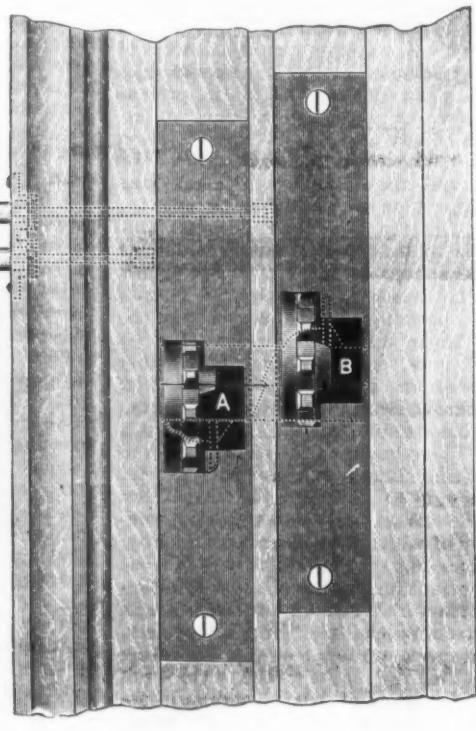


Fig. 2.—Face Plates of Balances.

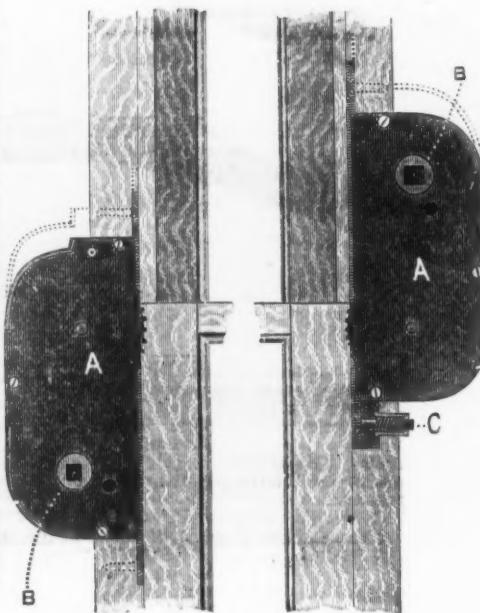


Fig. 6.—Nos. 2 to 9 Balances in Position.



Fig. 3.—Friction Pulley.



Fig. 4.—Track in Position.

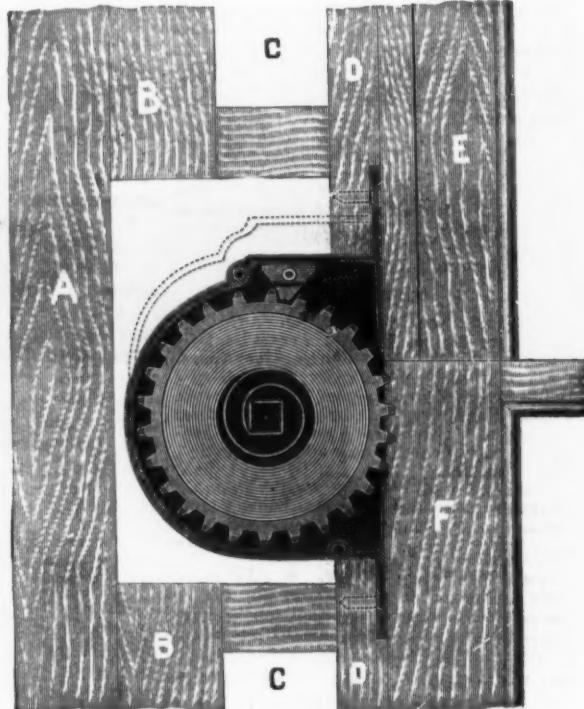


Fig. 5.—No. 1 Balance in Position.

sashes from 3 to 100 pounds. Fig. 1 shows a No. 1 balance. Fig. 2 is a sectional view of the face plates of the balance in position. Fig. 3 is the friction pulley, which is placed on the opposite side of the sash from the balance. The wheel of the balance works in the track on the left of the sash, the track being shown in Fig. 4. In Fig. 5 a section of the balance is shown with

The features of this article alluded to by the manufacturers which entitle it to preference over the old methods are: Simplicity of construction and durability, there being no sash cords, chains or ribbons to get out of order; window may be left open sufficient for ventilation, as the lock secures the sash at any point, preventing it from being raised or lowered

but the escutcheon and buttons, which are finished in real bronze or nickel plate. The point is made by them that thorough tests with heavy sashes have shown that it does not bend, but works up and down easily, and that it will adjust itself to any shrinkage of sash. Full directions for mounting are sent with each set, the balances being packed one set in a box.

A New Repeating Rifle.

The Winchester Repeating Arms Company, New Haven, Conn., and 312 Broadway, New York, are introducing a new

Perfect Fastener.

C. R. Nelson, 108 Liberty street, New York, manufacturer of the Perfect Fastener, has called our attention to many en-

justable to the sash, and for friction beads of sliding doors and casings. The fastener consists of a flat washer and screw. The washer has beveled or square edge, and is fitted for round or flat head screws. In



Fig. 1.—Repeating Rifle, Model 1892.



Fig. 2.—Repeating Carbine, Model 1892.

applying it a hole is bored in the stop bead large enough to allow of a $\frac{1}{4}$ -inch adjustment either way, more or less, as desired. The washer should more than cover the hole in any event. If a window binds or is too loose it requires but little effort to remedy the difficulty. If necessary to remove window sash for repairs there

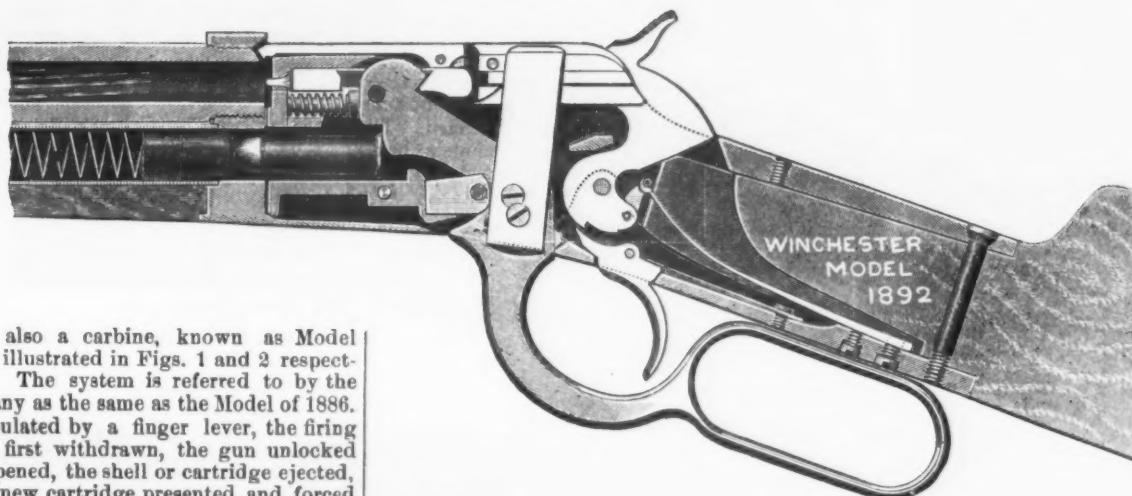


Fig. 3.—Cartridge in Magazine.

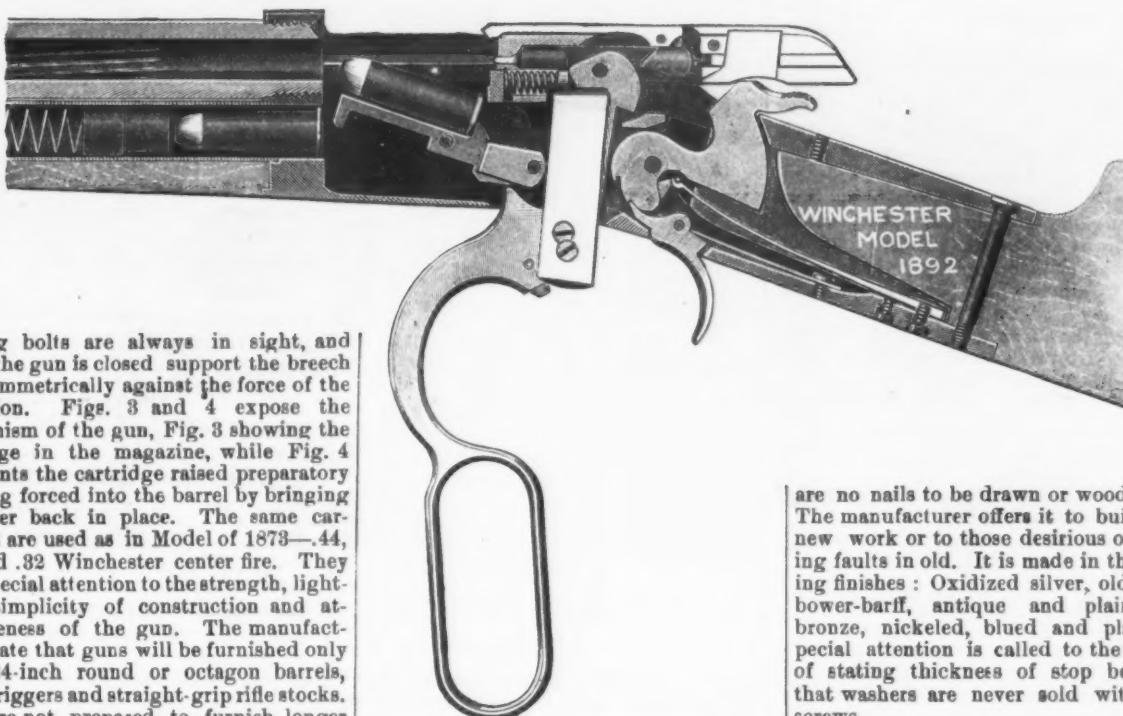


Fig. 4.—Cartridge Being Forced into Barrel.

rifle; also a carbine, known as Model 1892, illustrated in Figs. 1 and 2 respectively. The system is referred to by the company as the same as the Model of 1886. Manipulated by a finger lever, the firing pin is first withdrawn, the gun unlocked and opened, the shell or cartridge ejected, and a new cartridge presented and forced into the chamber, the firing pin being held back until the gun is again locked. The

locking bolts are always in sight, and when the gun is closed support the breech bolt symmetrically against the force of the explosion. Figs. 3 and 4 expose the mechanism of the gun, Fig. 3 showing the cartridge in the magazine, while Fig. 4 represents the cartridge raised preparatory to being forced into the barrel by bringing the lever back in place. The same cartridges are used as in Model of 1873—.44, .38 and .32 Winchester center fire. They call especial attention to the strength, lightness, simplicity of construction and attractiveness of the gun. The manufacturers state that guns will be furnished only with 24-inch round or octagon barrels, plain triggers and straight-grip rifle stocks. They are not prepared to furnish longer barrels, set triggers or pistol-grip stocks. The .44 caliber rifle, with 24 inch octagon barrel, will weigh an ounce or two less than 7 pounds. The .44 caliber carbine weighs about $6\frac{1}{2}$ pounds. The .38 and .32 calibers will weigh a little more than the .44 caliber rifle.

comiums in regard to this article received from architects, builders, mechanics and others interested. The article is designed to render window stop beads instantly ad-

are no nails to be drawn or wood marred. The manufacturer offers it to builders for new work or to those desirous of correcting faults in old. It is made in the following finishes: Oxidized silver, old copper, bower-barff, antique and plain brass, bronze, nickelated, blued and plain. Especial attention is called to the necessity of stating thickness of stop beads, also that washers are never sold without the screws.

The new Vogt compound locomotive building at the Altoona shops of the Pennsylvania Railroad is approaching completion. It will have $7\frac{1}{2}$ foot drivers, which, however, will be partly hidden, as in the English designs.

Brown's Improved Wire Cutters.

The Copeland Hardware Mfg. Company, Worcester, Mass., are introducing a wire cutter, as shown in the accompanying cuts. The cutter, Fig. 1, is forged from tool steel, and is finished in the best manner. The bolt is secured with a nut, both being case hardened. The bolt is

ple, without changing the adjustment of the wrench. The wrenches are finished in blue and nickel.

Walker's Self-Pulling Corkscrew.

Erie Specialty Mfg. Company, Erie, Pa., are offering the corkscrew as illus-

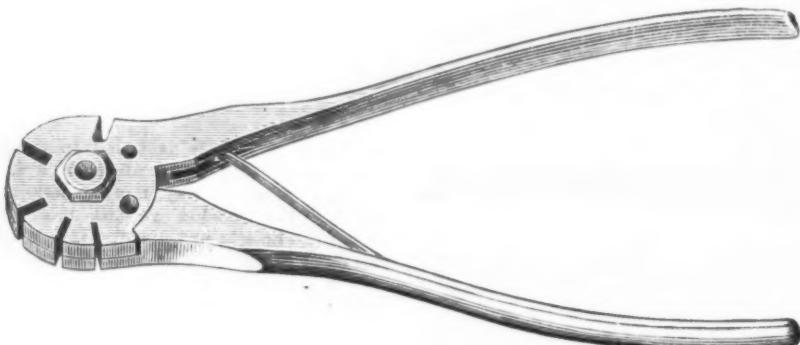


Fig. 1.—Brown's Improved Wire Cutters.

drilled lengthwise, resulting in a hole, through which the adjustable gauge shown in Fig. 2 is run, and by means of which any number of pieces of wire may be cut exactly the same length. Wire may be

treated herewith. The screw is described as being made of the best quality of tempered steel, and is finely nickelated. The handle is of hard wood, the metal being fastened in the handle, it is stated, so that



Fig. 2.—Adjustable Gauge for Wire Cutters.

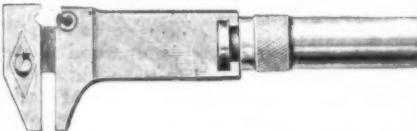
cut any length from $\frac{1}{2}$ to 8 inches in length, the manufacturers claiming that the cutter leaves the wire square at the end.

it cannot work loose or pull out. The screw has an improved sleeve attachment which keeps the head in place. The manufacturers claim that this corkscrew will

The Diamond Cycle Wrench.

The Gendron Iron Wheel Company, Toledo, Ohio, and 107 Chambers street, New York, offer to the trade the Diamond Cycle Wrench, illustrated herewith. It is alluded to as light, neat and strong, being all steel, drop forged and case hardened, all the parts being milled, enabling them to fit snug and work in each other easily. It weighs $5\frac{1}{2}$ ounces, is $4\frac{1}{2}$ inches long and has an adjustment of $1\frac{1}{2}$ inches. The handle lengthens out as the adjustment enlarges.

Among the advantages alluded to in connection with this wrench are that a whole turn is given the adjusting nut with one movement of the thumb and fingers; that



The Diamond Cycle Wrench.

it is strong because the inner jaw is of solid metal all around the wrench bar; that the handle is in two parts and they are locked in a central groove, making them almost as rigid as if in one solid piece. Especial attention is called to the spoke grip attachment, which is composed of a tempered steel dog, having teeth and pivotally inserted into the inner jaw, as shown in the cut. It has a slight rocking motion, allowing forward and back action (as a ratchet) in screwing a spoke or nip-

draw corks from bottles easily without agitating the contents, and that a cork can be drawn by a lady or child.

This is a great year for the Ottawa lumber trade, shipments being brisk for the British market. Of late sawn lumber is taking the place of square timber and the shipments this year are unusually large.



Walker's Self-Pulling Cork Screw.

CONTENTS.

PAGE.	
The Richards Cam. Illustrated.....	183
Arbitration Proposed.....	185
Railroad Statistics	186
Triplex Electric Mine Pumps. Illustrated..	187
The Niagara Electric Transmission.....	187
World's Fair Notes.....	188
A Useful Hardening Process.....	188
The Jobbing Mill Scale.....	189
The Rohan Sheet-Metal Trimmer and Cutter. Illustrated.....	190
An Important Change	191
Tin-Plate Works of Marshall Bros. & Co....	191
Another Chicago Elevated Assured.....	192
Importance of Cut-Off Couplings.....	192
The Rule of the Advisory Committee.....	193
San Francisco News.....	193
The Week	194
Editorials:	
The Leveling of Wages.....	195
The Canadian Imbroglio.....	195
The Great Consolidations.....	195
The Ultimatum of the Amalgamated Association.....	196
One of the Uncollapsed Booms.....	196
The Efficiency of the Naval Ram.....	196
The Agitation for Good Roads.....	197
The Tactics of the Coal Combine.....	197
Arbitration in Iron Mills.	197
Correspondence.....	197
Obituary.....	198
Wilkie, Bothwell & Co., Limited.....	198
Southern Pig Iron Rates.....	198
Building Trades' Trouble in New York.....	199
The Homestead Strike.....	199
Washington News.....	200
The Wire Scale..	200
Manufacturing:	
Iron and Steel	201
Machinery.....	201
Hardware.....	202
Miscellaneous.....	202
Trade Report:	
Chicago.....	203
Pittsburgh.....	204
Cleveland.....	205
Philadelphia.....	206
St. Louis.....	207
Detroit.....	207
Louisville.....	207
Cincinnati.....	207
New York.....	208
Metal Market	208
Coal Market.....	208
Financial.....	209
British Iron and Metal Markets.....	209
Hardware:	
Condition of Trade.....	210
Notes on Prices.....	212
Louisville.....	212
G. M. Hanchett. Portrait.....	213
Profit Sharing.....	213
Trade Items.....	214
Export Notes	215
A New Steamship Line to South America.	215
Hardware and Tools. Illustrated.....	215
Display Stand for Farm Bells. Illus.....	216
It is Reported—	216
Exports.....	217
Paints and Colors.....	217
The Magney Cate Sash Balance. Illus.	218
A New Repeating Rifle. Illustrated	219
Perfect Fastener	219
Brown's Improved Wire Cutter. Illus.....	220
The Diamond Cycle Wrench. Illustrated...	220
Walker's Self-Pulling Corkscrew. Illus....	220
Current Hardware Prices.....	221
Current Metal Prices.....	228

Current Hardware Prices.

AUGUST 3, 1892.

Note.—The quotations given below represent the Current Hardware Prices which prevail in the market at large. They are not given as manufacturers' prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figures than the manufacturers name, it is not stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the jobbers, perhaps by the jobbers at the figures named.

Adjusters, Blind

Domestic	20¢ doz \$3.00, 33½%
Excelsior	20¢ doz \$10.00, 50¢ & 10¢ & 5%
North's.	list net @ 10%
Zimmerman's—See Fasteners, Blind.	

Ammunition—See Caps, Cartridges, Shells, &c.**Anvils.**

Eagle Anvils, 20 lb 10¢	15¢ @ 15 & 5%
Peter Wright's	11¢ @ 11 & 5%
Armitage's Mouse Hole	10¢ @ 10 & 5%
Am. Wrought, Horse shoe brand	11¢ @ 11 & 5%
Trenton	10¢ @ 10 & 5%
Wilkinson's	10¢ @ 11 & 5%
Moore & Barnes Mfg. Co.	33½¢

Anvil Vise and Drill—

Millers Falls Co., \$18.00	20%
Cheney Anvil and Vise	25%
Allen Anvil and Vise	40 & 10%
Star	45 & 5%

Apple Parers—See Parers, Apple, &c.**Augers and Bits—**

Douglas Mfg. Co.	10¢ & 25¢
Wm. A. Ives & Co.	10¢ & 25¢
Humphreysville Mfg. Co.	10¢ & 25¢
French, Swift & Co. (F. H. Beecher)	10¢ & 25¢
P. S. & W. Co.	10¢ & 25¢
Rockford Bit Company	5¢
Cook's, Douglas Mfg. Co.	5¢
Cook's, N. Y. & Copper Co. 50¢ & 10¢ @ 50¢ & 10¢	5¢
Ives' Circular Lip	60¢
Patent Solid Head	30¢
C. E. Jennings & Co. No. 10, extension	30¢
Hip.	40¢
C. E. Jennings & Co. No. 30	60¢
C. E. Jennings & Co. Auger Bits, 2 sets, 33½ quarters, No. 5, \$5; No. 30, \$3.50 & 20¢	5¢
Lewis' Patent Single twist	45¢
Russell Jennings' Auger and Bits, 25¢ & 10¢	5¢
Imitation Jennings' Bits	60¢ @ 60 & 10%
Paine, Diehl & Co.'s	24¢ gro.
Silver & Co.	20¢ doz \$5.50

Bell Stock Drills—

Morse Twist Drills	50¢ & 10¢ & 5%
Standard	50¢ & 10¢ & 5%
Cleveland	50¢ & 10¢ & 5%
Syracuse, for metal	50¢ & 10¢
Syracuse, for wood (wood list)	30¢ & 30¢ & 5%
Cincinnati, for wood	30¢ & 10%
Cincinnati, for metal	45¢ & 10%

Expansive Bits—

Clark's small, \$18; large, \$26, .35¢ & 35¢ & 10¢	
Ives' No. 4, 20¢ doz \$80	40¢
Swan's	40¢
Steer's, No. 1, \$26; No. 2, \$22	35¢
Stearns' No. 2, \$48	20¢

Gimlet Bits—

Common	gross \$2.75 @ \$3.25
Diamond	20¢ doz \$1.25, 40¢ & 10%
Bee	25¢ & 25¢
Double Cut, Shepardson's	.45¢ & 45¢ & 10%
Double Cut, C. Valley Mfg. Co.	\$0.25 & 10¢
Double Cut, Hartwell's	25¢ & 25¢
Double Cut, Douglass'	40¢ & 10%
Double Cut, Ives.	60¢ @ 60 & 10%

Hollow Augers—

Ives'	33½¢ & 33½¢
French, Swift & Co.	10¢ & 10%
Douglass'	10¢ & 10%
Bonney's Adjustable, 20¢ doz \$48, 40¢ & 10%	
Stearns'	20¢ & 10%
Ives' Expansive, each \$4.50, 50¢ & 5%	
Universal Expansive, each \$4.50, 20¢	
Wood's	25¢ & 25¢ & 10%
Cincinnati Adjustable	25¢ & 10%
Cincinnati Standard	25¢ & 10%

Ship Augers and Bits—

L'Hommedieu's	15¢ & 10¢ @ 15 & 5%
Watrous'	15¢ & 10¢ @ 15 & 10%
Snell's	15¢ & 10¢ @ 15 & 5%
Snell's Ship Auger Patt's Car Bits, 15¢ & 10¢ @ 15 & 5%	

Awl Hafts—See Hafts, Awl.

Awls—	
Awls, Sewing, Common	20¢ doz \$3.00
Awls, Should. Peg	20¢ gr. \$1.50 @ \$1.55
Awls, Pat. Peg	20¢ gr. \$1.50 @ \$1.55
Awls, Shouldered Brad.	20¢ gr. \$1.30 @ 1.40
Awls, Handled Brad.	20¢ gr. \$2.50 @ \$3.00
Awls, Handled Scratch.	20¢ gr. \$1.00 @ \$1.20
Awls, Socket Scratch.	20¢ doz \$1.10 @ \$1.20

Awl and Tool Sets—See Sets, Awl and Tool.

Axes—	Plain, Beveled, First quality, best brands \$7.00 @ \$7.50
First qual., other brands	6.62¢ @ 6.75¢
Second quality	6.00 6.50

Axle Grease—See Grease, Axle.

Axes—	3¢ & 4½¢, No. 2, 5¢ & 6¢
Nos. 7 to 14	6¢ & 10¢
Nos. 15 to 18	47½¢ @ 50¢
Nos. 19 to 22	70¢
Concord Axes, loose collar	4½¢ @ 4½¢
Concord Axes, solid collar	5½¢ @ 5½¢
National Tubular Self Oiling	33½¢ @ 33½¢ & 5½¢

Bag Holders—See Holders, Bag.**Balances—**

Spring Balances	40¢
Chatillon, 20¢ doz \$80.00 0.95 1.75 net	
Chatillon Straight Balances	40¢
Chatillon Circular Balances	50¢ & 10%

Barb Wire—See Wire, Barb.**Bars—**

Crow—	
Cast Steel	20¢ to 3¢
Iron, Steel Points	20¢ to 3¢

Basins, Wash—

Standard Fiberware, No. 1, 10½-inch, \$2; 12-inch, \$2.25; 13½-inch, \$2.75; 15-inch, \$3.25.	
Chatillon's No. 1	40¢
Chatillon's No. 2	50¢
Custer's	33½¢

Beaters—

Egg—	
Dover	20¢ doz \$1.50
Duplex (Standard Co.)	20¢ doz \$1.25
Rival (Standard Co.)	20¢ & 10¢
Duplex Extra Heavy (Standard Co.)	20¢

Beats—

Bryant's	gross \$14.00
Double (H. & R. Mfg. Co.)	gross \$14.00
Easy (H. & R. Mfg. Co.)	gross \$12.00
Triple (H. & R. Mfg. Co.)	gross \$16.00
Spiral	gross \$12.25 @ 14.50
Improved Acme (H. & R. Mfg. Co.)	gross \$9.00
R. B. & W. Co.	gross \$12.00

Beaters—

Cow—	
Keystone, P. D. & Co., Each, No. 1, \$1; No. 2, \$2	30¢
Enterprise	20¢
Clark's	33½¢ & 35¢

Bellows—

Cow—	
Wollenkamp's	20¢
Bogelow & Dowse	20¢
Taylor's	20¢

Bellows—

Electric—	
Blacksmiths'	60¢ & 60¢ & 10¢
Molders'	40¢ & 40¢ & 10%
Hand Bellows	40¢ & 40¢ & 10%

Bellow, Rubber—

Common Standard	70¢ to 10¢ & 75¢ & 5%
Extra	70¢ to 10¢ & 75¢ & 5%
N.Y.B.&P. Co., Carbon	60¢
N.Y.B.&P. Co., Diamond	60¢
N.Y.B.&P. Co., Para	40¢

Bench Stops—See Stops, Bench.**Benders and Upsetters, Tire—**

Stoddard's Lightning Tire Upsetters	.15¢
</

Halters—

Covert's, Rope, Jute.....	60&10@10&2%
Covert's Rope, 7-16-In., Jute.....	70&2%
Covert's Rope, 1/2-In., Hemp.....	50&2%
Covert's Adj. Rope Halters.....	40&2%
Covert's Hemp Horse and Cattle Tie.....	50&2%
Covert's Jute Horse Ties.....	70&2%
Covert's Jute Cattle Ties.....	70&10&2%
Covert's Adj. Web Halters.....	35&5&2%
E. Covert Mfg. Co.'s Halters.....	33&5%
E. Covert Mfg. Co.'s Horse and Cattle Ties.....	33&5%

Hammers—**Handed Hammers—**

Maydole's, list Dec. 1, '85.....	25&10@35%
Buffalo Hammer Co.....	
Humason & Beckley.....	50@50&10%
Atha Tool Co.....	
C. Hammond & Son.....	40&10@-
Fayette R. Plumb.....	
Artisan's Choice, A. E. Nall.....	40&10%
Regular Y. P., A. E. Nall.....	50%
Horseshoe Turning Hammers.....	50%
Other Hammers.....	50&10%
Cheney's Claw.....	40&10%
Cheney's Machinist's Riveting.....	50&5%
Hartford, Nail Hammers.....	40&5%
Hartford, Machinists, &c.....	50@50@50@10%
Magnetic Tack, Nos. 1, 2, 3, \$1.25, 1.50 & 1.75.....	30@10%
Nelson Tool Works.....	40&10%
Warner & Nobles, new list.....	25&10
Peck, Stow & Wilcox.....	40%
Sargent's.....	33@40%

Heavy Hammers and Sledges—

3 lb and under.....	25@40%
3 to 5 lb.....	25@30%
Over 5 lb.....	25@30%
Wilkinson's Smiths.....	10@6@11@20%

Handcuffs and Leg Irons

—See Police Goods.

Handles—

Cross-Cut Saw Handles—	
Atkins' No. 1 Loop, Ppr., 28¢; No. 3, 18¢; No. 6, 15¢; No. 2 and No. 4, Reversible, 18¢.	
Champion.....	15¢
Rodin, Wrought or Cast—	
Door or Thumb, Nos.....	1 2 3 4
Per doz.....	80.90 1.00 1.10 1.35 1.50
Hickory Firmer Chisel, ass'd, gr 4.50.....	60@10@10%
Hickory Firmer Chisel, large, gr 5.00.....	
Apple Firmer Chisel, ass'd, gr 5.00.....	
Apple Firmer Chisel, large, gr 6.00.....	
Socket Firmer Chisel, ass'd, gr 3.00.....	
Socket Framing Chisel, ass'd, gr 5.00.....	
J. B. Smith & Co.'s Pat File.....	50¢
File, assorted.....	gr 2.75
Auger, assorted.....	50¢
Auger, large.....	gr 7.00
Pat. Auger, Ives'.....	30@10%
Pat. Auger, Douglass'.....	set \$1.25
Pat. Auger, Swan's.....	set \$1.00
Hoe, Rake, Shovel, &c.....	50@10%

Hangers—

Barn Door, old patterns.....	60@10@10@70%
Barn Door, New England.....	60@10@10@70%
Samson Steel Anti-Friction.....	55%
Orleans Steel.....	55%
Hamilton Wrought Steel Track.....	55%
U. S. Wood Track.....	65%
Champion.....	60@10%
Rider and Wooster, Medina Mfg. Co.'s list.....	70%
Climax Anti-Friction.....	55%
Climax Anti-Friction for Wood Track.....	55%
Zenith for Wood Track.....	55%
Reed's Steel Arm.....	50%
Challenge, Barn Door.....	50%
Sterling.....	50@50@10%
Victor, No. 1, \$15.00; No. 2, \$16.50; No. 3, \$18.00.....	50@2%
Cheritree.....	50@10%
Kidder's.....	40@40@50%
Boss.....	60@10%
Bea Anti-Friction.....	60@10%
Duplex (Wood Track).....	60@10@25%
Terry's Pat., per doz pr. 4 in., \$10.00; 5 in., \$12.00, Terry's Steel Anti-Friction Leader, 50@10%	
Terry's Steel Anti-Friction Ideal, 50@10%	
Cronk's Patent, Steel Covered, 50@5%	
Wood Track Iron Clad, 2 ft. 10 in., 50@10%	
Carrier Steel Anti-Friction, 50@10%	
Architect, set \$6.00.....	20%
Eclipse.....	20@10%
Felix, set \$4.50.....	20%
Richards'.....	30@30@10%
Lane's New Standard.....	50@50@2%
Lane's Standard.....	50@50@2@10%
Lane's Parlor.....	40%
Ball Bearing Door Hanger, 20@10@20@10@10%	
Warner's Pat.....	20@10@20@10@10@10%
Stearns' Anti-Friction, 20@10@20@10@10%	
Faultless.....	40@20@5%
American, per set \$6.00.....	20@10%
Rider & Wooster, No. 1, \$24@; No. 2, 75¢.....	40%
Paragon, Nos. 1, 2 and 3.....	40@10%
Cincinnati.....	25@10%
Paragon, Nos. 5, 5½, 7 and 8.....	20@10%
Crescent.....	60@60@10%
Nickel, Cast Iron.....	50%
Nickel, Malleable Iron and Steel.....	40%
Souerton Anti-Friction Single Strap, 33½% Wild West, 4 in. Wheel, \$15.00; 5 in. Wheel, \$21.00.....	45%
Star.....	40@10@10@10@5%
May.....	50@5@50@10%
Interstate.....	50%
Magic.....	40%
Pendulum, Payson's.....	40%
Moody.....	45%

Harness Snaps—See Snaps.**Hatchets—**

American Axe and Tool Co. Blood's.....	
Hunt's.....	
Hurd's.....	
Mann's.....	
Peek's.....	
Underhill's.....	40 & 10
Buffalo Hammer Co. Fayette R. Plum....	50@5%
C. Hammond & Son.....	
Kelly's.....	
Sargent's & Co. P. S. & W. Co. Ten Eyck Edge Tool Co. Collins.....	10%
Schulte, Lohoff & Co. Schulte, Lohoff & Co.	50@50@5%

Hay and Straw Knives—

See Knives.

Hinges—**Blind Hinges—**

Parker.....	75@2%
Huffer.....	50%
Clark's, Nos. 1, 3, 5, 40 and 50.....	
Clark's Mortise Gravity.....	75@10@5@80%
Sargent's, Nos. 1, 3, 5, 11, 13.....	50@10@5@10@5%
Sargent's, No. 12.....	77@10@10@5%
Reading's Gravity.....	75@10@75@10@5%
Shepard's.....	
Noiseless.....	75@10@5%
Niagara.....	80%
Buffalo.....	80%
Clark's Genuine Pattern.....	80%
O. S. Lull & Porter.....	75@10@5%
Acme, Lull & Porter.....	75@10@5%
Queen City Reversible.....	70@10@60@75@70@75%
Clark's Lull & Porter, Nos. 1, 2, 2½, 3.....	75@10@25@25@25@25%
North's Automatic Blind Fixtures, No. 2, for Wood, \$9.00; No. 3, for Brick, \$11.50.....	10%

Gate Hinges—

Western.....	per doz \$4.40, 60%
N. E. Reversible.....	per doz \$4.50, 55@10%
Clark's, Nos. 1, 2, 3.....	60@6@10@5%
N. Y. State.....	per doz \$5.00, 55@10%
Automatic.....	per doz \$12.50@5%
Shepard's.....	60@10@60@5%

Spring Hinges—

Geer's Spring and Blank Butts.....	40%
Union Spring Hinge Co.'s list, March, 1886.....	20%
Barker's Double Acting.....	25%
Union Mfg. Co.....	25%
Bonniere's.....	30%
Buckman's.....	30%
Bardsley's Patent.....	40%
U. S......	25@10%
Empire and Crown.....	20%
Hero and Monarch.....	20%
American, Gem and Star.....	20%
Oxford.....	20%
Wiles'.....	10%
Devore's.....	40%
Rex.....	40%
Royal.....	60%
Reliable.....	60%
Champion.....	60%
Stearns'.....	60@10@60%
Samson, 2 gross.....	\$14.00

Wrought Iron Hinges—

List February 14, 1891.	
Strap and T.....	50@10@5%
Corrugated Strap and T.....	50@50@10%
Screw Hook and T.....	6 to 12 in., 2 in., 4 in.
Screw Strap.....	22 to 26 in., 2 in., 4 in.
Screw Hook and Eye.....	1 ½ in., 2 in., 3 in.
Rolled Blind Hinges, Nos. 32 and 34.....	50@10@5%
Rolled Blind Hinges, Nos. 232 and 234.....	50@10@5%
Rolled Plate.....	55@10@5%
Rolled Raised.....	70@10@5%
Plate Hinges, 8, 10 & 12 in., 2 in., 5 in., "Providence" over 12 in. per doz.....	35@10@5%
Garden, Mortar, &c.....	70%
Planter's, Cotton, &c.....	70%
Warren Hoe.....	60%
Grub.....	60@10@5%

Handled—

Garden, Mortar, &c.....	70%
Planter's, Cotton, &c.....	70%
Warren Hoe.....	60%
Magic.....	70@10@5%
Carrier Steel Anti-Friction.....	50@10%
Architect, per set \$6.00.....	20%
Eclipse.....	20@10%
Felix, set \$4.50.....	20%
Richards'.....	30@30@10%
Lane's New Standard.....	50@50@2%
Lane's Standard.....	50@50@2@10%
Lane's Parlor.....	40%
Ball Bearing Door Hanger, 20@10@20@10@10%	
Warner's Pat.....	20@10@20@10@10@10%
Stearns' Anti-Friction, 20@10@20@10@10%	
Faultless.....	40@20@5%
American, per set \$6.00.....	20@10%
Rider & Wooster, No. 1, \$24@; No. 2, 75¢.....	40%
Paragon, Nos. 1, 2 and 3.....	40@10%
Cincinnati.....	25@10%
Paragon, Nos. 5, 5½, 7 and 8.....	20@10%
Crescent.....	60@60@10%
Nickel, Cast Iron.....	50%
Nickel, Malleable Iron and Steel.....	40%
Souerton Anti-Friction Single Strap, 33½% Wild West, 4 in. Wheel, \$15.00; 5 in. Wheel, \$21.00.....	45%
Star.....	40@10@10@10@5%
May.....	50@5@50@10%
Interstate.....	50%
Magic.....	40%
Pendulum, Payson's.....	40%
Moody.....	45%

Hooks—**Cast Iron—**

Bird Cage, Sargent's List.....	60@10@10%
Bird Cage, Reading.....	60@10@10%
Clothes Line, Sargent's list.....	60@10@10%

File and Tool—

Bald Pat.....	per doz \$4.00, 25%
Nicholson File Holders.....	20%
Dick's Tool Holder.....	30%

Hooks—**Cast Iron—**

Bird Cage, Sargent's List.....	60@10@10%
Bird Cage, Reading.....	60@10@10%
Clothes Line, Sargent's list.....	60@10@10%

Clothes Line, Reading list.

Brittan, Graham & Mathes, list Jan. 1890.	60&10&10%	
Perkins' Burglar Proof.	60&25%	
Plates.	33&32%	
Baines Mfg. Co.	40&40&10%	
Yale Lock Mfg. Co.	net prices	
Deltz Flat Keys.	.30%	
L. & C. Round Head Latches.	.30&2%	
E. C. Flat Key Latches.	.33&10%	
Romer's Night Latches.	.15%	
Brooklyn Latches.	.50&10%	
Sherpadson or U. S.	.35%	
Seed's N. Y. Hasp Lock.	.25%	
Padlocks—		
List June 10, 1891.	.50&2%	
Norwich Lock Mfg. Co., old list.	.70&2%	
Yale Lock Mfg. Co.'s.	net prices	
Eagle.	.25&2%	
Eureka, Eagle Lock Co.	.40&2%	
Romer's Nos. 0 to 91.	.30%	
Romer's Scandinavian, &c., Nos. 100 to 505.	.15%	
A. E. Deltz.	.40%	
Champion Padlocks.	.40%	
Hatchkiss.	.30%	
Star.	.60%	
Horseshoe.	? doz \$0.40&10% Barney Mfg. Co.	.40&40&10%
Nock's.	.30%	
Brown's Pat.	.25%	
Scandinavian.	.90&90&10%	
E. T. Fraim's Keystone Scandinavian, Nos. 119, 120, 130 and 140.	.90&10%	
Other Nos.	.65%	
Ames Sword Co. up to No. 150.	.40%	
Ames Sword Co. above No. 150.	.50%	
Slaymaker, Barry & Co.	.1010 line. 85&5% No. 41 line. 45&10% No. 61 line. 50&8% No. 21 line. 75%	
Sash, &c.—		
Clerk's No. 1, \$10; No. 2, \$8 ? gr.	.33&2%	
Ferguson's.	.33&2%	
Victor.	.60&10&2%	
Walkers.	.10%	
Attwell Mfg. Co.	.25&33&3%	
Reading.	.60&10&60/60&10&10%	
Hammond's Window Springs.	.40%	
Common Sense, Jap'd, Cop'd and Br'd.	.40&40&10% ? gr \$4.00	
Common Sense, Nickel Plated.	\$ gr \$10.00	
Universal.	.30%	
Kempshall's Gravity.	.60%	
Kempshall's Model.	.60&60&10%	
Corbin's Daisy, list Feb. 15, 1886.	.70%	
Payson's Perfect.	.60&10%	
Huglin's Sash Balances.	.25&5&2%	
Huglin's New Sash Locks.	.25&5&2%	
Stoddard's "Practical".	.10%	
Eyes' Patent.	.60&10&60&10&5%	
Fish (Liesche's pat.), No. 100, ? gr.	.88; .105	
No. 105, ? gr.	.40%	
Davis, Bronze Barnes Mfg. Co.	.50%	
Champion Safety, list January, 1889.	.70%	
Security.	.70%	
Giant, list Jan., 1892.	.70&5%	
Wolcott's.	.60&10&8%	
Monarch.	.50%	
Lumber Tools—See Tools, Lumber.		
Lustro—		
Four-ounce bottles.	? doz, \$1.75; ? gross.	
	\$17.00	
Machines.		
Boring—		
Without Augers. Upright, Angular.		
Douglas.	.550 \$6.75.	
Shell's, Rice's Pat.	.550 6.75&10&10%	
Jennings.	.550 6.75, 45&45&10%	
Other Machines.	.235 2.75.	
Phillips' Patent with Augur.	.700 7.50.	
Miller's Falls.	.750 .25%	
Fluting—		
Knox, 4½-Inch Rolls.	.35; 25 each ?	
Knox, 6-Inch Rolls.	.35; 60 each ?	
Eagle, 3½-Inch Rolls.	.25.	
Eagle, 5½-Inch Rolls.	.25.	
Crown, 4½ in., \$3.50; 6 in., \$4.00; 8 in., \$5.50 each.	.35	
Crown Jewel, 6 in.	.35; 50 each.	
American, 5 in., \$3.00; 6 in., \$3.40; 7 in., \$4.50 each.	.35	
Domestic Fluter.	.each, \$1.50	
Geneva Hand Fluter, White Metal.	? doz \$12.25	
Crown Hand Fluter, Nos. 1, \$15.00; 2, \$12.50; 3, \$10.00.	.35%	
Shepard Hand Fluter, No. 85, per doz \$15.30.	.40%	
Shepard Hand Fluter, No. 110, ? doz \$11.00.	.40%	
Shepard Hand Fluter, No. 95, ? doz \$8.00.	.40%	
Clark's Hand Fluter, ? doz \$15.00 .35%		
Combined Fluter and Sad Iron.	.35%	
Buffalo, ? doz \$10.00.	.10%	
Hoisting—		
Moore's Hand Hoist, with Lock Brake.	.20%	
Moore's Differential Pulley Block.	.40%	
Surey's Mfg. Co.'s.	.25%	
Sure Grip Steel Tackle Blocks.	.25%	
Washing—		
Anthony Wayne, ? doz, No. 1, \$51; No. 2, \$45; No. 3, \$42.		
Western Star, ? doz, No. 2, \$45; No. 2 \$48.		
Weisels.	? doz \$54.00	
Fair and Square.	? doz \$42.00	
Mallets—		
Hickory.	.20&10&20&10&10%	
Lignum Vitae.	.20&10&20&10&10%	
B. & L. Block Co., Hickory & L. V.	.30&30&10%	
Mattocks—Regular list.		
60&10&60&10&5%		
Measures—		
Standard Fiberware, No. 1, peck, ? dozen, \$4; ½ peck, \$3.50.		
Meat Cutters—See Cutters, Meat		
Menders, Harness—		
Per doz.	\$2.00	
Mills—		
Coffee—		
Box and Side, List, Jan. 1, 1888.	.60&10&10%	
Net prices are often made which are lower than above discount.		
American, Enterprise Mfg. Co.	.20&10&20&30%	
The Swift, Lane Bros.	.20&10&20&30%	
Seed's N. Y. Hasp Lock.	.25%	
Padlocks—		
List June 10, 1891.	.50&2%	
Norwich Lock Mfg. Co., old list.	.70&2%	
Yale Lock Mfg. Co.'s.	net prices	
Eagle.	.25&2%	
Eureka, Eagle Lock Co.	.40&2%	
Romer's Nos. 0 to 91.	.30%	
Romer's Scandinavian, &c., Nos. 100 to 505.	.15%	
A. E. Deltz.	.40%	
Champion Padlocks.	.40%	
Hatchkiss.	.30%	
Star.	.60%	
Horseshoe.	? doz \$0.40&10% Barney Mfg. Co.	.40&40&10%
Nock's.	.30%	
Brown's Pat.	.25%	
Scandinavian.	.90&90&10%	
E. T. Fraim's Keystone Scandinavian, Nos. 119, 120, 130 and 140.	.90&10%	
Other Nos.	.65%	
Ames Sword Co. up to No. 150.	.40%	
Ames Sword Co. above No. 150.	.50%	
Slaymaker, Barry & Co.	.1010 line. 85&5% No. 41 line. 45&10% No. 61 line. 50&8% No. 21 line. 75%	
Pails—		
Galvanized—		
Quarts.	10 12 14	
Hill's Light Weight, ? doz.	.25 3.00 3.25	
Hill's Heavy Weight, ? dz.	.25 3.00 3.75	
Hilwig's.	.25 3.00 3.05	
Sidney Shepard & Co.	.25 3.00 3.00	
Inclad.	.25 3.00 3.00	
Fire Buckets.	.27 3.25 3.50	
Buckets—See Well Buckets.		
Indurated Fiber Ware—25¢		
Star Pails, 12 qt.	? doz \$5.40	
Stable and Milk, 14 bt.	? doz \$6.00	
Fire Pails, deep.	? doz \$5.40	
Pails, round bottom.	? doz \$7.80	
Standard Fiber Ware—		
Plain. Deer.		
Water Pails, 12 qt., ? doz.	\$4.50	
Dairy Pails, 14 qt., ? doz.	4.50 5.00	
Fires Pails, No. 1, 12 qt., ? doz.	4.50 5.00	
Fire Pails, No. 2, 14 qt., ? doz.	5.00 5.50	
Sugar Pails.	6.00 6.50	
Horse Pails.	5.00	
Buggy Pails.	4.00	
Slop Jars (bal. trap).	8.00 9.00	
Chair Pails, 14 qt.	6.50 7.50	
Pans—		
Dripping—		
Small sizes.	? doz 64¢	
Large sizes.	? doz 54¢	
Silver & Co. (Covered).	40¢	
Fry—		
Standard List:		
No. 0.	0 1 2 3 4	
? doz.	\$3.00 \$3.75 \$4.25 \$4.75 \$5.25	
No. 5.	5 6 7 8	
? doz.	\$6.00 \$7.00 \$8.00 \$9.00	
Polished, regular goods.	? doz \$7.50&10%	
Acme Fry Pans.	.60&10%	
Dust—		
Steel Edge, No. 1.	? doz \$1.75	
Paper and Cloth—		
Sand and Emery—		
List April 19, 1886.	.50&50&10%	
Sibley's Emery and Crocus Cloth.	.30%	
Parers—		
Apple—		
Advance.	? doz \$4.75	
Baldwin.	? doz 5.25	
Bonanza.	? each 5.00	
Daisy.	? doz 4.00	
Dandy.	? each 7.50	
Eclipse.	? doz 2.25	
Eureka, 1888.	? each 16.00	
Family Bay State.	? doz 12.00	
Favorite.	? doz 5.00	
Gold Medal.	? doz 4.00	
Ideal.	? doz 4.00	
Improved Bay State.	? doz 27.00&30.00	
Little Star.	? doz 4.50	
Monarch.	? doz 13.50	
New Lightning.	? doz 5.50	
Oriole.	? doz 4.00	
Penn.	? doz 4.00	
Perfection.	? doz 4.00	
Pomona.	? doz 6.00	
Rocking Table.	? doz 4.50	
Turn Table.	? doz 13.50	
Waverly.	? doz 4.00	
White Mountain.	? doz 4.25	
72.	? doz 7.00	
Potato—		
White Mountain.	? doz \$4.50	
Antrilin Combination.	? doz \$5.50	
Hoosier.	? doz \$13.50	
Saratoga.	? doz \$5.50	
Pencils—		
Faber's Carpenters'.	high list 50%	
Faber's Round Gilt.	? gro \$5.25	
Dixon's Lead.	? gro \$4.50	
Dixon's Lumber.	? gro \$6.75	
Dixon's Carpenters'.	10%	
Picks—		
Railroad or Adze Eye, 5 to 6, \$12.00; 6 to 7, \$13.00.	.60&10&60&10&5%	
Picture Nails—See Nails, Picture.		
Pinking Irons—See Irons, Pinking.		
Pins—		
Bow—		
Humason, Beckley & Co.'s.	.60&10%	
Sargent & Co.'s, \$17 and \$18.	.60&10%	
Peck, Stow & W. Co.	.50&10&50&10&5%	
Curtain—		
Silvered Glass.	.net	
White Enamel.	.net	
Escutcheon—		
Iron, list Nov. 11, 1885.	.50&10&20&10&5%	
Brass.	.60&60&5%	
Pipe, Wrought Iron—		
List July 21, 1892.		
1½ and under, Plain.	.60&50&60&10&5%	
1½ and under, Galvanized.	.50&55&50&10&5%	
1½ and over, Plain.	.70&50&70&10&5%	
Sardine Scissors.	.60&2.75&6.00	
Star.	? doz \$2.75	
Sprague, No. 1, \$2.00; 2, \$2.25; 3, \$2.50; 5, \$3.00.	.50&10&10&10%	
Excelsior, No. 1, \$2.50; No. 2, \$1.50...40%		
World's Best, ? gross, No. 1, \$12.00; No. 2, \$24.00; No. 3, \$36.00.	.50&10&10&10%	
Universal, ? doz \$3.00.	.55&5%	
Domestic, ? doz \$2.00.	.45%	
Champion, ? doz \$2.00.	.50%	
Planes and Plane Irons—		
Wood Planes—		
Molding.	.40&10%	
Bench, First quality.	.50&10%	
Bench, Second quality.	.55&10%	
Bailey's (Stanley R. & L. Co.).	.60&10%	
Iron Planes—		
Steers' Iron Planes.	.35&35&50&10%	
Birmingham Plane Co.	.40&40&50&10%	
Gage Tool Co.'s Self-Setting.	.50&50&10&10%	
Chaplin's Iron Planes.	.40&40&10&10%	
Sargent's.	.30&10&30&10&10&10%	
Standard Tool Co.	.50&50&50&5%	
Plane Irons—		
Butcher's.	.85.00&60.00&5.25 to 2	
Busc Bros.	.30%	
Auburn Thistle.	.30&10%	
Ohio.	.25	
Sandusky.	.25	
L. & J. White.	.25	
Stanley R. & L. Co.	.50&10%	
Plates—		
Felloe.	? doz \$6.00&10%	
Pliers and Nippers—		
Button's Patent.	.50&50&10%	
Hall's No. 2, 5 in., \$13.50; No. 4, 7 in., \$21.00.		
Humason & Beckley Mfg. Co.	.50&50&10&10%	
Lindsay's Giant.	.40%	
Gas Pliers.	.60%	
Gas Pliers, Custar's Nickel Plated.	.60&5%	
Russell's Parallel.	.25%	
P. S. & W. Cast Steel.	.50%	
P. S. & W. Tinners' Cutting Nippers.	.10%	
Carew's Pat. Wire Cutters.	.20%	
Morrill's Parallel, ? doz, \$12.00.	.30&5%	
Cronk's 8 in., \$15.00; 10 in., \$21.00.	.50&50&55%	
Cronk's Button Pattern.	.50&10&60%	
Cronk's Carrier Pliers.	.60&60&5%	
Plumbs and Levels—		
Regular List.	.75&10&75&10&5%	
Stanley's Duplex.	.20&20&10%	
Stanley's Handy.	.20&20&10%	
Disston's.	.50%	
Pocket Levels.	.70&10&70&10&5%	
Davis Iron Levels.	.30%	
Davis' Inclinometers.	.10&10%	
Poachers—		
Egg—		
Buffalo Steam Egg Poachers.	? doz, No. 1, \$6.00; No. 2, \$9.00.	
Silver & Co., 6-Ring.	? doz, \$4.00; 3-Ring.	
	.25%	
Pokes, Animal—		
Bishop's I. X. L.	? doz \$6.00	
Bishop's O. K.	.50&55%	
Bishop's Pioneer.	.50&75%	
Bishop's American.	.50&75%	
Eagle, Double Stake.	.50&75%	
Eagle, Single Stake.	.50&75%	
Buckeye, Single Stake.	.50&75%	
Bolding.	.50&60.00	
Ice Goods—		
R. I. Tool Co., Handcuffs.	\$15.00 ? doz 10%	
R. I. Tool Co., Leg Irons.	\$25.00 ? doz 10%	
Powers'.	.25%	
Dickey's Improved Handcuffs; 2 Hands, Polished.	? doz, \$48.00; Nickled, \$57.00; 3 hands, Polished, ? doz, \$67.00; Nickled, \$84.00.	
J. F. Lovell's Police Goods.	.25%	
Polish, Metal—		
Prestoline.	.30%	
Prestoline Paste.	.33&3%	
Gaston's Silver Compound.	.33&3%	
Polish, Stove—		
Joseph Dixon's.	? gro \$6.00, 10%	
Gem.	? gro \$4.50, 25%	
Gold Medal.	? gro \$6.00, 25%	
Mirror.	? gro \$6.00, 25%	
Lustro.	? gro, \$4.75	
Ruby.	? gro \$8.50, 25%	
Eising Sun, 5 gro lots.	? gro \$8.50, 25%	
Dixon's Plumhago.	? doz 8.50, 25%	
Boydton's Noon Day.	? gro \$13.00	
Parlor Pride Stove Enamel.	? gro \$12.00	
Yates' Liquid.	2 3 5 10 gal	
Yates' Liquid.	.50 gal., \$8.00 .70 .60 .50	
Yates' Standard Paste Polish, 10 lb cans.		
Jet Black.	.50 gal., \$12.00	
Japanese.	.50 gal., \$13.50	
Fireside.	.50 gal., \$12.50	
Diamond O. K. Enamel.	.50 gro \$19.00	
Bonnell's Liquid Stove Polish.	.50 gro \$19.00	
Bonnell's Paste Stove Polish.	.50 gro \$6.00	
Black Eagle Paste, 5 and 10 lb cans.	.12&12%	
Black Jack Water Paste, 5 and 10 lb cans.	.12&12%	
Nickel Plate Paste.	.50 gro \$6.00	
Crown Paste.	.50 gro \$7.20	
Crown Paste in 5 and 10 lb cans.	.12&12%	
Black Flag.	.50 gro \$7.20	
Black Flag, 5 and 10 lb cans.	.12&12%	
Black Flag, Liquid, in bottles.	.50 gro \$8.00	
Diamond Rock Nickel Cleaner.	.50 gro \$10.00	
Raven Paste.		
5-lb. pails, (per case of 6 or 12).		
Less than case.	.60 .15&15%	
Liquid, 6 oz. bottles.	.50 gross, \$5.00	
Liquid, 8 oz. bottles.	.50 gross, \$5.00	
Water Polish.	.50 gross, \$5.85	
Poppers, Corn—		
Round or Square, 1 qt.	? gr \$10.00&10.50	
Round or Square, 1½ qt.	? gr \$15.00&15.50	
Round or Square, 2 qt.	? gr \$18.50&19.00	
Post Hole and Tree Augers and Diggers—See Diggers, Post Hole, &c.		
Potato Parers—See Parers, Potato.		
Pots—		
Glue—		
Tinned.	.40&10&40&10&5%	
Enamelled.	.40&10&40&10&5%	
Family, Howe's "Eureka".	.40%	
Family, L. F. C. S.'s "Handy".	.50%	
Powder—		
In Canisters—		
Fine Sporting, 1 lb each.	.00.00	
Duck, 1 lb each.	.60	
Rifle, 1 lb each.	.30	
Rifle, ½ lb each.	.18	
Rifle, ¼ lb each.	.15	
In Kegs—		
Rifle, 2½-5 kegs.	.00.00	
Rifle, 1½-4 kegs.	.27.50	
Duck, 6½-10 kegs.	1.50	
Duck, 1½-6 kegs.	5.75	
Duck, 1-4 kegs.	3.00	
Trap, 2½-5 kegs.	6.00	
Trap, 2-4 kegs.	3.25	
Trap, 1½-3 kegs.	1.75	

Presses—**Fruit and Jelly—**

Enterprise Mfg. Co.	20&10@30%
Henis.	20@30%
Sherpa's Queen City.	40%
Silver & Co.	20@2.75

Pruning Hooks and Shears—See Shears.**Pullers—Nail—**

Scranton.	20 doz., \$18.00, 33½%
Curtis Hammer.	20 doz., \$4.50
Giant, No. 1.	20 doz., \$18.00, 10%
Giant, No. 2.	20 doz., \$15.00, 10%
Pelican.	20 doz., \$9.00, 25%
Eclipse.	Each, \$2.00, net
Economy.	20 doz., \$6.00

Pulleys—

Hot House, Awning, &c.	60@10%
Japanned Screw.	60@10%
Brass Screw.	60@10%
Japanned Side.	60@10%
Japanned Clothes Line.	60@10%
Empire Sash Pulley.	55@60%
Moore's Sash, Anti-Friction.	50%
Hay Fork, Solid Eye, \$4.00; Swivel, \$4.50.	50@10@50@10@5%
Hay Fork, "Anti-Friction," 5 in. solid, \$5.70.	50%
Hay Fork, "F" Common and Patent Bushed.	20%
Hay Fork, Tarbox Pat. Iron.	20%
Hay Fork, Reed's Self-Lubricating.	60%
Shade Rack.	45%
Tackle Blocks—See Blocks.	
Moore's Anti-Friction 5 in. Wheel, 20 doz., \$12.00.	40%

Pumps—

Cistern, Best Makers.	60@60@10%
Pitcher Spout, Best Makers.	67@60@70%
Pitcher Spout, Cheaper G'd's.	70@65@75@10%

Punches—

Saddler's or Drive, good.	20 doz., 60@65%
Bemis & Call Co.'s Cast Steel Drive.	50@55%
Bemis & Call Co.'s Springfield Socket.	50@55%
Spring, good quality.	20 doz., \$2.50@2.60
Spring, Leach's Pat.	15%
Bemis & Call Co.'s Spring and Check.	40%
Solid Tinner's, P. S. & W. Co.	doz., \$1.44.
Tinners' Hollow Punches, P. S. & W. Co.	55%
Rice Hand Punches.	15%
Avery's Revolving.	40%
Avery's Sawset and Punch—See Sawsets.	

Rail—

Sliding Door, Wr't Brass.	20 doz., 35¢, 15%
Sliding Door, Bronzed Wr't Iron.	20 doz., 76¢, 10%
Sliding Door, Iron, Painted.	20 doz., 40%
Barn Door, Light, In.	14 1/2 26 34
Per 100 feet.	\$2.00 2.50 3.10, 10%
B. D. for N. E. Hangers—	
Small, Med. Large.	
Per 100 feet.	\$3.15 2.70 3.25 Net
Terry's Steel Rail.	70@70@5%
Victor Track Rail, 7¢ per foot.	50@55%
Carrier, double braced, Steel Rail, 7¢ per foot.	45@48%
Moore's Wrought Iron.	24¢
Moody Steel Rail.	45¢

Rakes—

Cast Steel, Association goods.	60@6@70%
Cast Steel, outside g'd's.	60@10@10@70@5%
Malleable.	70@70@5%
Gibbs Lawn Rake.	20 doz., \$1.96
Canton Lawn Rake.	20 doz., \$3.75
Favorite Lawn Rake.	20 doz., \$4.40
Fort Madison Prize Bow Brace and Peerless.	65¢
Fort Madison Steel Tooth Lawn Rake.	25¢

Razors—

J. R. Torrey Razor Co.	20¢
Wostenholm and Butcher.	\$10 to \$20, 10%
Jordan's AAAI, new list.	Net
Jordan's Old Faithful, new list.	Net
Galvanic.	20 doz., \$15.00
Electric Cutlery Co.	Net

Razor Strops—See Strops, Razor.**Rings and Ringers—****Bull Rings—**

Union Nut Co.	55¢
Sargent's.	60@10@70@5%
Hotchkiss' low list.	30%
Humason, Beckley & Co's.	70@8@10%
Peck, Stow & W. Co.'s.	50@10@50@10@8@10%
Ellrich Hdw. Co., White Metal, low list.	50@50@10%

Hog—

Top of the Hill Ringers.	20 doz. \$2.00
Hill's Improved Ringers.	20 doz. \$1.25
Hill's Old Style Ringers.	20 doz. \$1.25
Hill's Tonga.	20 doz. \$3.00
Hill's Rings.	20 doz. bx \$1.25
Perfect Rings.	20 doz. bx \$1.50
Blair's Hog Ringers.	20 doz. \$2.25
Blair's Hog Rings.	20 doz. \$2.00
Blair's Hog Rings.	20 doz. \$2.00
Champion Rings.	20 doz. \$2.00
Champion Rings, Double.	20 doz. \$2.25
Brown's Rings.	20 doz. \$2.00
Brown's Rings.	20 doz. \$1.15@1.25
Electric Hog Rings.	20 doz. boxes \$1.50
Electric Hog Rings.	20 doz. \$2.00
Major Rings.	20 doz. \$1.25
Major Ringers.	20 doz. \$2.00

Rivets and Burrs—

Iron, list Nov. 17, '87.	40%
Copper.	60@10%
Coppered Iron, Bettina Brand.	40%

Rivet Sets—See Sets.**Rods—**

Stair, Brass.	25&2½
Stair, Black Walnut.	20 doz. 40¢

Rollers—

Barn Door, Sargent's list.	60@10@10%
Acme Moore's Anti-Friction.	55%
Union Barn Door Roller.	70%
Thompson Mfg. Co.'s Lawn Rollers.	30%

Rope—

Manila.	7-16 in. diam. and larger
Manila.	34 and 5-16 in.
Manila, Tinned Rope.	20 doz. 12½¢
Manila, Hay Rope.	20 doz. 12½¢
Sheet.	7-16 inch and larger

Sisal.	34 in. 20 doz. 10½¢
Sisal, Hay Rope.	20 doz. 10½¢
Sisal, Tarred Rope.	20 doz. 10½¢
Sisal, Medium Linth Yarn.	20 doz. 10½¢
New Zealand, 4 and 5-16 in. & larger	20 doz. 10½¢
New Zealand, 34 in. & 5-16 in.	20 doz. 10½¢
New Zealand, Hay Rope.	20 doz. 10½¢
New Zealand, Tarred Rope.	20 doz. 10½¢

Note.—Manufacturers' prices on above

1¢ per lb. less, f.o.b. factory—less 1½% for cash.

Cotton Rope.

Jute Rope.

Wire—**Rules—****Starrett's Rules.****Screws—**

Bench, Iron.	55@10@55@10@10%
Bench, Wood, Beech.	60@10@10%
Bench, Wood, Hickory.	20@10%
Hand, Wood.	25@10@25@10@5%
Hand, Grand Rapids, list.	35%
Lag, Blunt Point, list Jan. 1, 1890.	75¢@10@10%
Coach and Lag, Gimlet Point, list Jan. 1, 1890.	75¢@10@10%
Bed.	25@5%
Bed, Iron, Sargent's.	60@10@10%
Hand Rail, S. & F. Mfg. Co.	70@10@75@10@5%
Hand Rail, Am. Screw Co.	75%
Jack Screws, Millers Falls list.	50@50@5%
Jack Screws, P. & W.	35%
Jack Screws, Stearns.	40@40@10@5%

Pruning Shears and Hooks.**Pruning Tools.****Pruning Shears, Henry's Pat.****Pruning Shears, Henry's.****Pruning Shears, Stearns'.****Pruning Shears, Sargent's.****Pruning Shears, Stearns'.****Pruning Shears, Stearns'.**</div

Snaps, Harness, &c.-

Anchor (T. & S. Mfg. Co.)	.65%
Fitch's (Bristol)	.50&10%
Hotchkiss	.10%
Andrews	.50%
Sargent's Patent Guarded	.70&10&10%
German, new list	.40&10%
Cover	.50&10&5&2%
Cover, New Patent	.50&10&5&2%
Cover, New R. E.	.60&10&5&2%
Covered Spring	.60&10&10%
E. Cover's Triumph	.50&5%

Snaths, Scythe

List	.50&5&5%
------	----------

Soldering Irons—See Irons, Soldering.**Spittoons, Cuspidors, &c.—Standard Fiberware—**

Cuspidors, 8½ inch, P doz.	No. 5, \$8
Spittoons, Daisy, 8-inch, No. 1, \$4	10 and 11 inch, \$6

Spoke Shaves—See Shaves, Spoke.**Spoke Trimmers—See Trimmers, Spoke.****Spoons and Forks—Tinned Iron—**

Basting, Cen. Stamp. Co.'s list	.70&10%
Solid Table and Tea, Cen. Stamp. Co.'s list	.70&10%
Buffalo, S. S. & Co.	.50&5&2%

Silver Plated—

4 months or 5% cash 30 days:	
Meriden Brit. Co., Rogers	.40&15%
C. Rogers & Bros.	.40&15%
Rogers & Bros.	.40&15%
Reed & Barton	.40&15%
Wm. Rogers Mfg. Co.	.40, .50&5%
Simpson, Hall, Miller & Co.	.40, .50&5%
Holmes & Edwards Silver Co.	.40, .50&5%
L. Boardman & Son	.50&12&5%

Miscellaneous—

Holmes & Edwards Silver Co.:	
No. 67 Mexican Silver	.50&10&5%
No. 30 Silver Metal	.50&10&5%
No. 24 German Silver	.50&10&5%
No. 50 Nickel Silver	.50&5&5%
No. 49 Nickel Silver	.50&10&5%
Wm. Rogers Mfg. Co.:	
Rogers' Silver Metal	.50&10&6%
15% Rogers' German Silver	.08&10%
25% Rogers' Nickel Silver	.50&8%
German Silver	.50&5&5%
German Silver, Hall & Sons	.50&5&5% cash
Nickel Silver	.50&5&5% to 10&5% cash
Britannia	.60&6&5%
Boardman's Nickel Silver, list July 1, 1891	.60&7&5%
Boardman's Britannia Spoons, case lots	.60&5, cash

Springs—

Door—	
Torrey's Rod, 30 in.	P doz \$1.20@1.25
Gray's, P gr. \$20.00	.25%
Bee Rod, P gr. \$20.00	.25%
Warner's No. 1, P doz \$2.50, No. 2, \$3.30	.50&5&5%
Gem (Coll.), list April 19, 1886	.10&15%
Star (Coll.), list April 19, 1886	.20&20&5%
Victor (Coll.)	.08&10&60&10&5%
Champion (Coll.)	.60&10&60&10&10%
Cowell's, No. 1, P doz \$18.00; No. 2, \$15.00	.50&50&10%
Rubber, complete, P doz \$4.50	.55&10%
Hercules	.50&50&10%

Carriage, Wagon, &c.—

Elliptic, Concord, Platform and Half Scroll.	.60&10&10%
Cliff's Bolster Springs	.25%

Squares—

Steel and Iron, 1	.80&10&80&10&10%
Nickel-Plated	
Try Square and T Bevels	.60&10&10%
Dissott's Try Square and T Bevels	.50%
Winterbottom's Try and Miter, .30&10%	
Starrett's Micrometer Caliper Squares	.25%

Avery's Flush Bevel Squares**Avery's Bevel Protractor****Squeezers—****Fodder—****Lemon—****Porcelain Lined, No. 1—P doz \$6.00****Wood, No. 2—P doz \$8.00, 25&30%****Wood, Common—P doz \$1.70, 1.75****Dunlap's Improved—P doz \$1.50****Samms., No. 1, \$5.00; No. 2, \$12.50****\$1.50 P doz****Jennings' Star—P doz \$2.50****The Boss—P doz \$2.50****Dean's, Nos. 1, P doz \$6.50; 2, \$3.35; 3, \$1.90****Little Giant—P doz \$2.50****King—P doz \$2.50****Hotchkiss Straight Flash—P doz \$12.00****Silver & Co., Glass—P gro. \$9.00****Manny Lemon Juice Extractor****Standard—P doz \$0.75@1.00****Improved—P doz \$2.00****Standard Fiber Ware—See Ware, Standard Fiber.****Staples—****Blind—****Barbed, ½ in. and larger—P doz 7@7½¢****Barbed, ¼ in.—P doz 8@8½¢****Fence Staples, Galvanized, / as B'rb Wire****Fence Staples, Plain—See Trd. Rep.****Extra discount 25&5%****Steelyards—40&10@50%****Stocks and Dies—****Blacksmith's—Waterford Goods—.35%****Butterfield's Goods—.35%****Lightning Screw Plate—.25@30%****Reece's New Screw Plates—.25@30%****Reversible Ratchet—.30%****Gardner—.25%****Stops, Bench—****Morrill's—P doz \$9, 50%****Hotchkiss's—P doz \$5, 10@10&10%****Weston's, No. 1, \$10; No. 2, \$9, 25@10&5%****McGill's, P doz \$3—.30%****Cincinnati—.25@10%****Terrell's Nos. 1 and 2, P doz, \$3; No. 3, \$3.00—.30%****Stone—****Sythe Stones—****Pike Mfg. Co., list April, 1892—.33@5%****Oil Stns. &c.—****Pike Mfg. C.: Price P doz****Hindostan No. 1—.8¢****Sand Stone—.8¢****Wasita Stone, Extra—.9¢****Wasita Stone, No. 2—.9¢****Wasita Slips, Extra—.9¢****Wasita Slips, No. 1—.9¢****Arkansas Stone, No. 1, 3 to 5 in.—.9¢****Arkansas Stone, No. 1 5½ to 8 in.—.9¢****Turkey Oil Stone, 4 to 8 in.—.9¢****Turkey Slips—.9¢****Lake Superior, Chase—P doz 13¢****Lake Superior Slips, Chase—P doz 20¢****Stove Polish—See Polish, Stove.****Stretchers, Carpet—****Cast Steel, Polished—P doz \$2.25****Cast Iron, Steel Points—P doz \$1.75****Socket—P doz \$1.75****Bullard's—.25@25&10%****Strops, Razor—****Genuine Emerson—.60@50&5%****Imitation "—P doz \$2.00, 20&10&5%****Torrey's—.20%****Badger's Belt and Com—P doz \$2.00****Lamont Combination—P doz \$4.00****Jordan's Pat, Padded, list Nov. 1, '89, 50% Net****Electric Cutlery Co.—Net****Stuffers or Fillers, Sausage—****Miles' "Challenge"—P doz \$20, 50@50&5%****Perry's—P doz, No. 1, \$15.00; No. 0, \$21.00—.20%****Starrett's—.50@50&5%****German Silver—.50@50&5%****Nickel Silver—.50@50&5% cash****Britannia—.60@50&5% cash****Boardman's Nickel Silver, list July 1, 1891—.60@50&5% cash****Boardman's Britannia Spoons, case lots—.60@50&5% cash****Stuffers or Fillers, Sausage—****Brown's—.50@50&5% cash****Imperial—.50@50&5% cash****Starrett's—.50@50&5% cash****Garland—.50@50&5% cash****Parlor Queen—.50@50&5% cash****Housewife's Delight—.50@50&5% cash****Queen—.50@50&5% cash****Queen, with band—.50@50&5% cash****Weed, Improved—.50@50&5% cash****Hub—.50@50&5% cash****Cog-Wheel—.50@50&5% cash****Easy—.50@50&5% cash****Monarch—.50@50&5% cash****Goshen—.50@50&5% cash****Ladies' Friend—.50@50&5% cash****Advance—.50@50&5% cash****Supreme—.50@50&5% cash****Lawn—****Bissell No. 5—P doz \$17.00****Bissell No. 8—P doz \$20.00****Bissell, Grand—P doz \$36.00****Standard—P doz \$24.00****Domestic—P doz \$22.00****Domestic, No. 2—P doz \$24.00****Grand Rapids—P doz \$24.00****Crown Jewel, No. 1, \$18.00; No. 2, \$19.00; No. 3, \$20.00****Magic—P doz \$15.00****Improved Parlor Queen—P doz \$27.00****Nickel—P doz \$27.00****Japanned—P doz \$24.00****Excelsior—P doz \$22.00****Garland—P doz \$18.00****Parlor Queen—P doz \$15.00****Housewife's Delight—P doz \$15.00****Queen—P doz \$18.00****Queen, with band—P doz \$18.00****Weed, Improved—P doz \$18.00****Easy—P doz \$18.00****Monarch—P doz \$22.00</b**

Washers—

Size hole..... 5-16 3/4 3/4 3/4 to 13/4
Washers..... 6 5 3.50c 3
In lots less than 200 b., per b., add 3c, 5c
boxes 1c to list.

Wedges—

Iron..... 2 lb 31/4c
Steel..... 2 lb 31/4c

Weights, Sash—

Solid Eyes..... \$1 ton \$18.00@\$19.00

Well Buckets, Galvanized—

ce. Buckets Well, Galvanized.

Wheels, Well—

8 In., \$2.25; 10 In., \$2.70; 12 In., \$3.25

Wire and Wire Goods—

Iron—

Market, Br. & Ann., Nos. 0 to 18..... 75&10@80%
Cop'd, Nos. 0 to 18..... 75&5@75&10%

Galv., Nos. 0 to 18..... 70@70&10%
Tin'd. Tin'd list, Nos. 0 to 18. 70@70&10%
Stone,

Br. and Ann'd, Nos. 16 to 18..... 80c

Bright and Ann'd, Nos. 19 to 26..... 80&5%

Br. and Ann'd, Nos. 27 to 36..... 82&5%

Tinned.....

Tinned Broom Wire, 18 to 21, per b. 44c

Galvanized Fence, Nos. 8 and 9..... 44c

Brass, per lb. 18..... 250@33&1/2c

Copper, list Jan. 18, 1892..... 330@40%

Annealed Wire on Spools..... 60c

Mallin's Steel and Tin'd on Spools..... 60c

Mallin's Brass and Cop. on Spools..... 50c

Tate's Spoiled, Tin'd & Annealed..... 60&5%

Tate's Spoiled Cop. and Brass..... 50c

Cast Steel Wire..... 50c

Stubs' Steel Wire..... 60 to 80, 30c

Steel Music Wire, 12 to 30..... 60@70c per b.

Wire Clothes Line, see Lines.

Wire Picture Cord, see Cord.

Bright Wire Goods—

Standard list..... 80@20c 85c

Wire Cloth and Netting—

Painted Screen Cloth, good quality, per sq. ft. \$1.40

Galvanized Wire Netting..... 70@10@75%

Wire, Barb—

Prices unsettled.

See Trade Report.

Wire Rope—

See Rope, Wire.

Wrenches—

American Adjustable..... 40c

Baxter's Adjustable "S"..... 40@10@50%

Baxter's Diagonal..... 40@10@50%

Coe's' Genuine..... 50@8@3%

Coe's' Mechanics'..... 50@10@8%

Girard Standard..... 65@10%

Lamson & Sessions' Engineers'..... 60@10%

Lamson & Sessions' Standard..... 70@10%

P. S. & V. Agricultural..... 75@10@

Lamson & Sessions' Agric'l'..... 75@10@10%

Bemis & Call's:

Pat. Combination..... 35c

Merrick's Pattern..... 35c

Briggs' Pattern..... 25c

Cylinder or Gas Pipe..... 40@5%

No. 3 Pipe..... 40@10%

Aiken's Pocket (Bright)..... 45.00, 50@10%

The Favorite Pocket..... 2 doz. \$4.00, 40%

Webster's Pat. Combination..... 25c

Boardman's..... 20@10%

Always Ready..... 25@5%

Alligator..... 50c

Domohue's Engineer..... 20@10%

Acme, Bright..... 50@2%

Acme, Nicklede..... 40@2%

Walker's..... 70@70@5%

55@3%

Diamond Steel..... 55@3%

Cincinnati Brace Wrenches..... 25@10%

Taft's Vise Wrench..... 55@10@2%

Wringers, Clothes—

Am. Wringer Co.'s list July 1, '92. 2% cash

Colby Wringer Co.'s list Sept. 1, '91. 2% cash

Lovell Mfg. Co., list Jan. 1, 1892. 2% cash

Peerless Mfg. Co., list Feb., 1892. 2% cash

80@25%

Wrought Goods—

Staples, Hooks, &c., list March 17, 1892.

80@25%

Paints, Oils and Colors.—Wholesale Prices.

Animal and Vegetable Oils—

Linseed, City, raw, per gal. ... @ 40
Linseed, City, boiled..... 60 43

Linseed, Western, raw..... 38 39

Lard, City, Extra Whiter..... 62 ..

Lard, City, Prime..... 61 ..

Lard, City, Extra No. 1..... 48 ..

Lard, City, No. 1..... 40 ..

Lard, Western, prime..... 60 ..

Cotton-seed, Crude, prime..... 60 ..

Cotton-seed, Crude, off grades..... 26 ..

Cotton-seed, Summer Yellow, prime..... 31 32

Cotton-seed, Summer Yellow, off grades..... 30 ..

Sperm, Crude..... 68 ..

Sperm, Natural Spring..... 67 ..

Sperm, Bleached Spring..... 72 ..

Sperm, Natural Winter..... 73 ..

Sperm, Bleached Winter..... 78 ..

Whale, Crude..... 45 ..

Whale, Natural Winter..... 5 ..

Whale, Bleached Winter..... 58 ..

Whale, Extra Bleached..... 59 ..

Sea Elephant, Bleached Winter..... 62 ..

Menhaden, Crude..... 50 ..

Menhaden, Crude, Southern..... 31 ..

Menhaden, Light Pressed..... 37 ..

Menhaden, Bleached Winter..... 38 ..

Menhaden, Extra Bleached..... 40 ..

Tallow, City, prime..... 44 ..

Tallow, Westera, prime..... 42 43

Cocoanut, Ceylon..... 54@ 54

Cocoanut, Cochin..... 6 ..

Cod, Domestic..... 38 ..

Cod, Foreign..... 42 ..

Red Elaine..... 34 ..

Red Saponified..... 44@ 5

Bank..... per gal 35 ..

Straits..... 36 ..

Olive, Italian, blbs..... 58 ..

Neatsfoot, prime..... 50 ..

Palm, prime, Lagos..... 54@ 64

Paints and Colors—

Barytes, Foreign, per ton, \$22.00 @24.00

Barytes, Amer. floated..... 20.00 @32.00

Barytes, Amer. No. 1..... 15.00 @17.00

Barytes, Amer. No. 2..... 13.00 @15.00

Barytes, Amer. No. 3..... 11.00 @12.00

Blue, Celestial..... 6 ..

Blue, Chinese..... 40 ..

Blue, Prussian..... 25 ..

Blue, Ultramarine..... 8 ..

Brown, Spanish..... 1/2 ..

Brown, Vandyke, Amer. 3 ..

Brown, Vandyke, English..... 6 ..

Carmine, No. 40, in bulk..... 3.10 ..

Carmine, No. 40, in boxes or barrels..... 3.20 ..

Carmine, No. 40, in ounce bottles..... 4.30 ..

Chalk, in bulk..... 1/2 ..

Chalk, in bbls., per ton..... 33 ..

China Clay, English..... 1/2 ..

Cobalt Oxide, prep'd..... 9.00 @11.00

Cobalt Oxide, black..... 1/2 ..

Cobalt Oxide, black, lots 100 b. 2.50 ..

Cobalt Oxide, black, lots 1000 b. 2.65 @2.90

Green, Paris, in bulk..... 13 ..

Green, Paris, 170 @ 17c

kegs..... 14 ..

Green, Paris, small pack..... 15@ 22

Green, Chrome, ordinary..... 6 ..

Green, Chrome, pure..... 22 ..

Lead, Eng., R.R. white..... 84@ 10

Lead, Amn. White, dry or in oil:

Kegs, lots less than 500 b. 714@ 71/2c

Kegs, lots 500 b. to 5 tons. 63@ 7

Kegs, lots 5 tons to 12 tons. 63@ 63/4

Kegs, lots 12 tons and over. 63@ 63/4

Lead, White, in oil, 25 b. tin pails, add to keg price..... ..

Lead, White, in oil, 12 1/2 b. tin pails, add to keg price..... ..

Lead, White, in oil, 10 b. tin pails, add to keg price..... ..

Lead, White, in oil, 1 to 5 b. assorted tins, add to keg price..... ..

Lead, Red, blbs. and 1/2 bbls..... 63@ 7/2

Lead, Red, kegs..... 63@ 7/2

Litharge, kegs..... 63@ 7/2

Litharge, blbs. and 1/2 bbls..... 63@ 7/2

Litharge, bbls. and 1/2 bbls..... 63@ 7/2

TERMS, &c.—Lead and Litharge.—On lots of 500 b. or over, 60 days' time or 2% discount for cash if paid within 15 days of date of invoice.

Ocher, Rochelle..... 1.35 ..

Ocher, French Washed..... 1.35@ 1/2

Ocher, German Washed..... 1.35@ 3

Ocher, American..... 1/2 ..

Orange Mineral, English..... 84@ 0

Orange Mineral, French..... 10 ..

Orange Mineral, German..... 84@ 8

Paris White, English Chaff-stone..... 1.00 ..

Paris White, American..... 70 ..

Red, Indian, English..... 54@ 7

Red, Indian, American..... 2 ..

Red, Turkey..... 9 ..

Red, Tuscan..... 9 ..

Red, Venetian, American..... 1/2 ..

Red, Venetian, English..... 1.20 @1.35

Sienna, Italian, Burnt and Powd. per b. 4 ..

Sienna, Ital., Burnt Lumps..... 1.35@ 3/4

Sienna, Ital., Raw, Powd..... 1.35@ 5/4

Sienna, Ital., Raw, Lumps..... 1.35@ 3/4

Sienna, American, Raw and Powdered..... 1.35@ 1/4

Talc, French..... 1.35@ 1/4

Talc, American..... 0.9@ 1/4

Terra Alba, Fr'ch. per 100 b. 75 ..

Terra Alba, Eng. 70 ..

Terra Alba, American No. 1 70 ..

Terra Alba, American No. 2 70 ..

Umber, Turkey, Burnt and Powd. 34@ 4

Umber, Turkey, Burnt, Amer. 1.35@ 1/2

Umber, Turkey, E'w Amer. 1.35@ 1/2

Yellow, Chrome..... 10 ..

Vermilion, American Lead. 114@ 12

Vermilion, Quicks'r, bulk. 57 ..

Vermilion, Quicks'r, bags. 58 ..

Vermilion, Quicksilver am'r pkgs. 62 ..

Vermilion, English Import. 85 ..

Vermilion, Imitation, Eng. 8 ..

Vermilion, Trieste. 90 ..

Vermilion, Chinese. 92@ 95

Whiting Common, per 100 b. 37@ 42 1/2

Whiting Gilders. 45 ..

55 ..

Zinc, American, dry, per b. 41@ 5

Zinc, French, Red Seal..... 77@ ..

Zinc, French, Green Seal..... 9 ..

Zinc, French,

CURRENT METAL PRICES.

AUGUST 3, 1892.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

IRON AND STEEL— Bar Iron from Store

Common Iron:	
3/4 to 2 in. round and square.	1 lb. 1.90 @ 2.00¢
1 to 6 in. x 3/4 to 1 in.	
Refined Iron:	
3/4 to 2 in. round and square.	1 lb. 2.00 @ 2.10¢
1 to 6 in. x 3/4 to 1 in.	
4 1/2 to 6 in. x 3/4 to 1 in.	
1 to 6 in. x 1/4 and 5-16.	1 lb. 2.20 @ 2.30¢
Rods—1/8 and 11-16 round and sq.	1 lb. 2.10 @ 2.20¢
Bands—1 to 6 x 3-16 to No. 12.	1 lb. 2.30 @ 2.40¢
"Burden Best" Iron, base price.	1 lb. ... 3.00¢
Burden's "H. B. & S." Iron, base price.	1 lb. ... 2.80¢
"Ulster"	1 lb. ... 3.00¢
Norway Bars.	3.75 @ 4.00¢
Norway Shapes.	4.50 @ 5.00¢

Merchant Steel from Store

	Per lb
Open-Hearth and Bessemer Machinery.	
Toe Calk, Tire and Sleigh Shoe, base price in small lots	2 1/4¢
Best Cast Steel, base price in small lots.	8¢
Best Cast Steel Machinery, base price in small lots.	5¢
Sheet Iron from Store	
Black—	
Common R. G. Cleaned American.	
Nos. 10 to 16.	1 lb. 3 @ 3 1/4¢
17 to 20.	1 lb. 3 1/4 @ 3 1/4¢
21 to 24.	1 lb. 3 1/4 @ 3 1/4¢
25 and 26.	1 lb. 3 1/4 @ 3 1/4¢
27.	1 lb. 3 1/4 @ 3 1/4¢
28.	1 lb. 3 1/4 @ 4¢
American B. B.	1 lb. 4@ 4 1/2¢
Galvanized Sheet Iron	
Black—	
Nos. 10 to 16.	1 lb. 4.20¢
17 to 22.	1 lb. 4.60¢
23 to 24.	1 lb. 4.90¢
25 to 26.	1 lb. 5.30¢
27.	1 lb. 5.60¢
28.	1 lb. 6 @ 6.70¢
29 to 30.	1 lb. 7 @ 6.70¢
Genuine Russia, according to assortment.	1 lb. 11 1/4 @ 11 1/4¢
Patent Planished.	1 lb. A. 10¢
Craig Polished Sheet Steel.	1 lb. 8 1/2¢
English Steel from Store	
Best Cast.	1 lb. 15¢
Extra Cast.	1 lb. 16 1/2 @ 17¢
Swaged, Cast.	1 lb. 16¢
Best Double Shear.	1 lb. 15¢
Blister, 1st quality.	1 lb. 12¢
German Steel, Best.	1 lb. 10¢
2d quality.	1 lb. 9¢
3d quality.	1 lb. 8¢
Sheet Cast Steel, 1st quality.	1 lb. 15¢
2d quality.	1 lb. 14¢
3d quality.	1 lb. 12 1/2¢
R. Mushet's "Special."	1 lb. 48¢
"Titanic."	1 lb. 20¢
METALS	
Tin	Per lb
Banca, Pigs.	22 1/2 @ 23¢
Straits, Pigs.	23¢
Straits in Bars.	25¢
Tin Plates	Duty: 2¢ per lb.
Charcoal Plates—Bright—	Guaranteed Plates command special prices, according to quality.
Melyn and Calland Grade.	IC. 10 x 14. @ \$6.50
"	IC. 12 x 12. @ 6.75
"	IC. 14 x 12. @ 6.50
"	IC. 20 x 28. @ 13.00
"	IX. 10 x 14. @ 8.50
"	IX. 12 x 12. @ 8.75
"	IX. 14 x 12. @ 8.50
"	IX. 14 x 20. @ 15.00
"	IX. 20 x 28. @ 17.00
"	DC. 12 x 17. @ 6.00
"	DX. 12 x 17. @ 8.00
Allaway Grade.	IC. 10 x 14. @ 6.00
"	IC. 12 x 12. @ 6.25
"	IC. 14 x 20. @ 6.00
"	IC. 20 x 28. @ 12.00
"	IX. 10 x 14. @ 7.50
"	IX. 12 x 12. @ 7.75
"	IX. 14 x 20. @ 7.50
"	IX. 20 x 28. @ 15.00
"	DC. 12 x 17. @ 5.50
"	DX. 12 x 17. @ 7.00
Coke Plates—Bright—	Steel Coke. IC. 10 x 14. 14 x 20. \$5.60
"	10 x 20. @ 8.50
"	20 x 28. 11.50 @ 12.00
IX. 10 x 14. 14 x 20.	1 lb. 7.00
BV Grade.—IC. 10 x 14. 14 x 20.	1 lb. 5.50
Charcoal Plates—Terne—	Guaranteed Plates command special prices according to quality.
Dean Grade.—IC. 14 x 20.	1 lb. 5.75
"	20 x 28. @ 11.00
IX. 14 x 20.	1 lb. 6.50
"	20 x 28. @ 13.00
Abecarne Grade.—IC. 14 x 20.	1 lb. 5.65
"	20 x 28. 10.75 @ 11.00
IX. 14 x 20.	1 lb. 6.50
"	20 x 28. @ 13.00
Tin Boiler Plates—	
XXX, 14 x 26.	112 sheets @ \$18.35
XXX, 14 x 28.	112 sheets @ 14.50
XXX, 14 x 31.	112 sheets @ 16.00
Copper	Duty: Pig, Bar and Ingots, 1 1/4¢; Old Copper, 1¢ per lb. Manufactured (including all articles of which copper is a component of chief value), 35% ad valorem.

Ingot—

Lake.	@ 12 1/4¢
Ansonia grade Arizona.	@ 11 1/2¢
Ansonia grade Casting.	@ 11 1/4¢

Sheet and Bolt—
Prices adopted by the Association of Copper Manufacturers of the United States, May 19, 1892. Subject to a discount of 10% @ 20%, according to size of order.

Not wider than	Weights per sq. foot and prices per pound.						
	Over 64 oz.	32 to 64 oz.	16 to 32 oz.	14 to 16 oz.	12 to 14 oz.	10 to 12 oz.	8 to 10 oz.
30—72	24	25	25	25	25	25	30
30—72	24	25	25	25	25	25	30
36—96	22	24	26	30	33	—	—
36—96	22	24	25	27	31	—	—
48—96	22	24	26	28	32	—	—
48—96	22	24	25	27	29	33	—
60—96	22	24	25	27	29	34	—
60—96	22	24	25	27	29	34	—
84—96	23	24	—	—	—	—	—
84—96	23	24	—	—	—	—	—
Ov'rs 84 in. wide	25	27	—	—	—	—	—

Bolt Copper, 3/8 inch diameter and over, per pound. 22¢
Circles, Segments and Pattern Sheets, 60 in. diameter and less, 3¢ per lb advance over prices of Sheet Copper required to cut them from.
Circles, Segments and Pattern Sheets, over 60 in. diameter, up to 96 in. diameter inclusive, 4¢ per lb advance over prices of Sheet Copper required to cut them from.

Circles, Segments and Pattern Sheets, over 96 in. diameter, 5¢ per lb advance over prices of Sheet Copper required to cut them from.
Cold or Hard Roiled Copper 14 oz. per square foot and heavier, 1¢ per lb over the foregoing prices.

Cold or Hard Roiled Copper lighter than 14 oz. per square foot, 2¢ per lb over the foregoing prices.

All Polished Copper over 20 in. wide, 2¢ per lb advance over the foregoing prices.

Copper Bottoms, Plats and Flats—
Per lb.

14 ounce to square foot and heavier.	26¢
12 ounce and up to 14 ounce to square foot.	27¢
10 ounce and up to 12 ounce.	28¢
Lighter than 10 ounce.	29¢
Circles less than 8 inches diameter, 2¢ per additional.	
Circles over 13 inches diameter are not classed as Copper Bottoms.	
10% off 20% discount, according to size of order.	

Copper Wash Bowl Bottoms—
Tinned. 1 lb. 31¢, 10% @ 20%

Tinning—Net.

Tinning sheets on one side, 10, 12 and 14 x 48 each.	8¢
Tinning sheets on one side, 30, 60 each.	30¢
For tinning boiler sizes, 9 in. (sheets 14 in. x 60 in.), each.	15¢
For tinning boiler sizes, 8 in. (sheets 14 in. x 56 in.), each.	12¢
For tinning boiler sizes, 7 in. (sheets 14 in. x 52 in.), each.	12¢
Tinning sheets on one side, other sizes, per square foot.	24¢
For tinning both sides double the above prices.	

Plated Brass and Copper—
Not larger than 10 x 60.

16 oz. and heavier.	24¢ per lb.
14 oz.	24¢ per lb.
12 oz.	27¢ per lb.

Seamless Brass Tubes—
July 6, 1892. Net.

O. G.	N. G.	36	36	36	36	36	1	134
8-14	6-12	32	28	25	24	23	22	19
15	13	33	28	25	24	23	20	20
16	14	34	29	27	25	24	21	21
17	15	35	30	28	25	25	22	22
18	16	37	31	29	27	26	25	25
19	17	38	32	30	29	28	27	27
20	18-19	39	34	32	31	30	29	29
21	20	41	36	34	33	32	31	31
22	21	43	37	36	34	33	32	32
23	22	45	39	37	36	35	34	34
24	23	48	41	39	38	36	35	35
25	24	51	44	41	40	39	38	40

Copper, Bronze and Gilding Tube, 3¢ per lb additional.

Brazed Brass Tubing. (To No. 20 inclusive.) Above 5 1/2 inch to 3 inch, inclusive...

Plain, above 3 inch...

Plain, 5 1/2 inch...

Plain, 3 1/2 inch...

Plain, 3/4 inch...

Fancy Tubing, Brass, to No. 20, inclusive...

Bronze Tubing, 3¢ per lb more than Brass.

Discount from list... 30 @ ...

Cookson Hallett's.

Antimony—
Prices Paid in New York.

Heavy Copper.

Light and Tinned Copper.

Heavy Brass.

Light Brass.

Lead.

Tea Lead.

Zinc.

No. 1 Pewter.

No. 2 Pewter.

Wrought Scrap Iron.

Heavy Cast Scrap.

Stove Plate Scrap.

Burnt Iron.

Aluminum—
Prices per Ton.

Duty: 15¢ per lb.

Over 98% pure...

94% @ 98% pure...

Old Metals—
Prices Paid in New York.

Heavy Copper.

Light and Tinned Copper.

Heavy Brass.

Light Brass.

Lead.

Tea Lead.

Zinc.

No. 1 Pewter.

No. 2 Pewter.

Wrought Scrap Iron.

Heavy Cast Scrap.

Stove Plate Scrap.

Burnt Iron.

Aluminum.

Prices per Ton.